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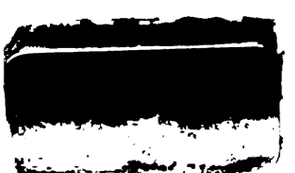
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MOTOR WORLD

A Trade Paper Giving the World's Motor News

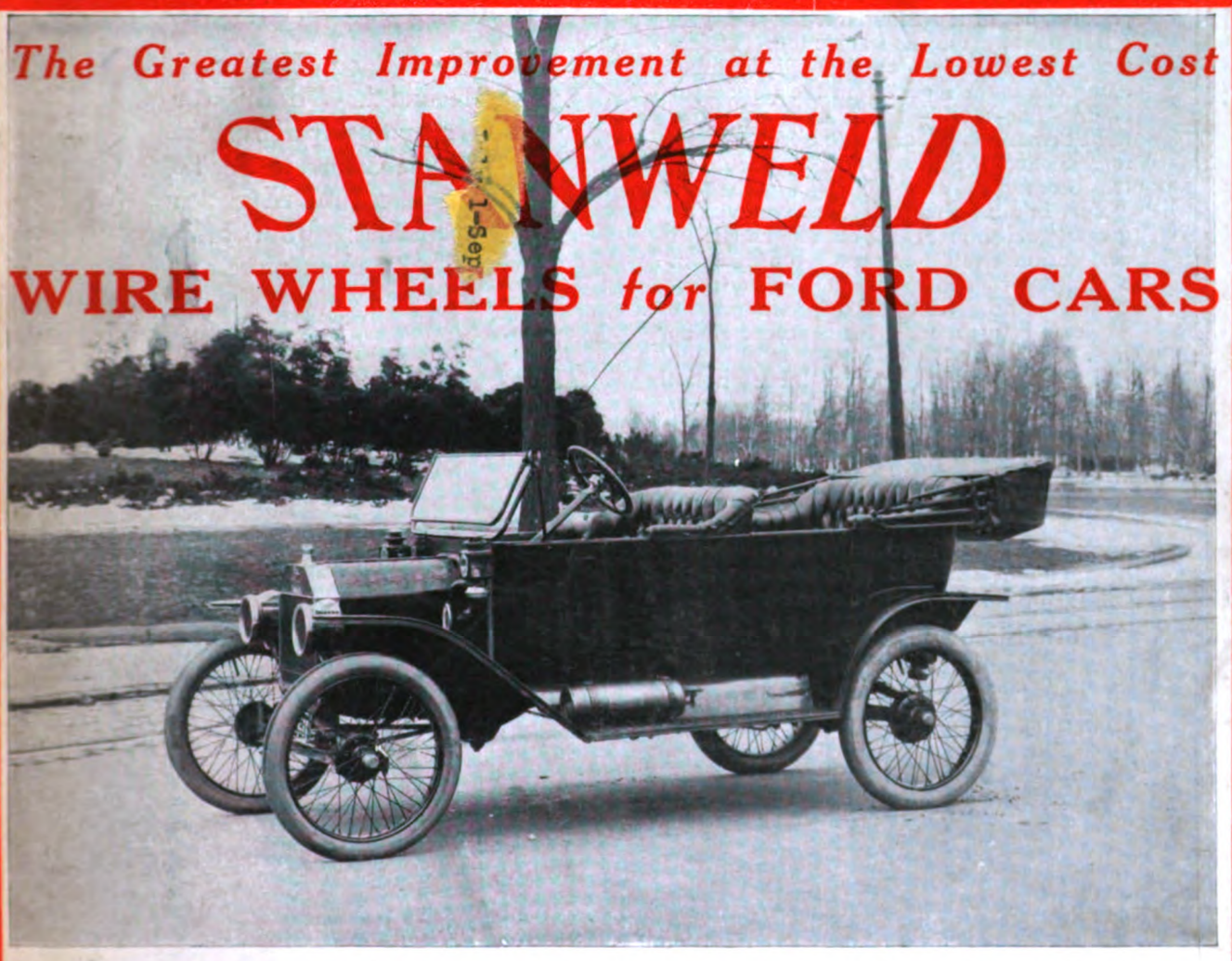
Volume XL
No. 1

New York, July 1, 1914

Ten cents a copy
Two dollars a year

The Greatest Improvement at the Lowest Cost

STANWELD
WIRE WHEELS for FORD CARS



THERE is no better appearing light car than a Ford equipped with Stanweld Wire Wheels. We've sold thousands of sets to owners in all parts of the United States. We charged $25 per set. And they were a mighty good value at that price.

But now increased production enables us to reduce the price to $20 for the plain clincher type, and to $27.50 for the quick-detachable rim type.

These prices put the best wire wheel equipment within the reach of every Ford owner.

At these prices every dealer in the United States should be able to sell a large percentage of the Ford owners in his territory. Every argument is at the dealer's command—a better-looking car, an easier-riding car, a lighter car, lower tire and gasoline expense. Get your sample set today.

NOW ONLY $20
Per Set of Four

The Standard Welding Company
Pioneers and the World's Largest Producers of Rims for Motor-Driven Vehicles
Main Office and Factory: CLEVELAND
Distributors in Principal Cities

Published Weekly by the Motor World Publishing Company, 231-241 West 39th St., New York

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EISEMANN

Under extreme conditions Eisemann Magneto efficiency and dependability usually shows the strongest. With the wonderful performance of the Eisemann Magnetos in the Indianapolis to the Pacific tour (11 perfect scores out of 11 entries) still in mind along comes the report from the Henderson Round-The-World-Car in Germany that the Eisemann is performing perfectly. The reproduction herewith from "Motor Age" tells the story.

Bear in mind that such tests as these carry greatest weight, for here your magneto must perform under all the varying conditions of climate, speed and road. It is also interesting to note that this trip around the world is being made with Kerosene as the fuel.

This imposes still another labor on the magneto, for a Kerosene mixture is not so easily ignited as a mixture of gasoline.

It matters not what the test may be, or where, Eisemann efficiency and Eisemann dependability are sure to be in evidence.

Eighty-three producers of motor driven apparatus in the United States are now using Eisemann as standard ignition, of which eighty-three, fifty are truck makers.

The Eisemann Magneto Co.

Sales and General Offices
32-33d St., Brooklyn, N. Y.

New York 123 W. 52d St. **Indianapolis, Ind.** 514 N. Capitol Ave. **Detroit, Mich.** 802 Woodward Ave.

Magneto on Henderson "Round-the-World" car is repeating performance of Indianapolis to Pacific tour Eisemann Magnetos —performing perfectly and with clean score.

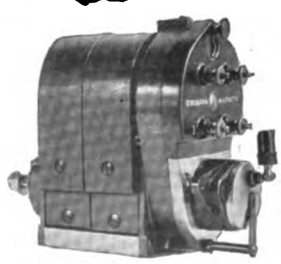
...ished ... ...ore reaching ...
ground.

Inspect Globe-Girdling Car

The parent factory of the Eisemann Magneto Co. is located at Stuttgart, where the Henderson was again welcomed by those who had seen it in New York before departure. Our magneto was found to be still in splendid working order, although it had not had any attention since the beginning of the trip. As we were among friends here, we took the opportunity of overhauling the car in anticipation of the long journey still before it.

To our surprise, we found that the cylinders were not at all carbonized in spite of our large mileage and the use of kerosene as an explosive.

From *MOTOR AGE*



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READING STANDARD COMPANY, INC.
MANUFACTURERS OF
RS MOTOR CYCLES

NOTICE: ... AND NOT TO INDIVIDUALS.
Dictated by F.D. - EFM. READING, PA., U.S.A. 5/21/14.

R. I. V. Co.,
1771 Broadway,
N. Y. City, N. Y.

Gentlemen:-

It is with pleasure that we take this opportunity of expressing our sincere thanks in the manner and attention you have always given our orders. The excellent results we have had from the R.I.V. Ball Bearing standing up qualities during the past two years that we have used them, have been very gratifying, and we wish to compliment you on the quality of your goods and the efficient service they have given us.

With our best wishes, we beg to remain

Yours very truly,

READING STANDARD COMPANY.
By Franklin Dold
Manager.

An Eloquent Tribute To R.I.V. Service

The above letter only corroborates the testimony of the thousands of users of R. I. V. Ball Bearings—"Here, There and Everywhere."

QUALITY is the keynote of R. I. V. construction, performance and service. The thoroughly demonstrated superiority of R. I. V., year after year, under all conditions, has won the confidence and business of leading manufacturers of high grade motor cars, motorcycles and machinery of every description.

R. I. V. COMPANY

S. W. Cor. 57th Street and Broadway New York City

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—Because once purchased the investment involved will preclude your discarding the speedometer immediately if it should prove inaccurate. As a result, you will have to be content with false mileage throughout the speedometer's entire life.

The one safe course to follow is to equip with the

CORBIN-BROWN SPEEDOMETER

"The Speedometer of Absolute Accuracy"

Its **centrifugal** principle is your assurance of constant, unvarying and permanent accuracy.

—Unlike the **magnetic** speedometer, it maintains absolute accuracy in all degrees of heat and cold and in the presence of electrical influences.

—Unlike the **magnetic** speedometer, its mechanical construction spells simplicity, strength and durability.

—Unlike the **magnetic** speedometer, its few strong parts reduce friction to a minimum and withstand the severest wear and strain.

—Unlike the **magnetic** speedometer, its **centrifugal** principle has been proved thoroughiy efficient by scientific tests in government laboratories and through actual road use.

Investigate the centrifugal Corbin-Brown!
Specify it for your new speedometer equipment!

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THE AMERICAN HARDWARE CORPORATION, Successors

NEW BRITAIN, CONN.

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Put a Kelly-Springfield-Gray Tube into a tub of water and see it float. That proves that the rubber in it is real. Put a Kelly-Springfield Gray Tube on your car and see it last. That proves that the real rubber has been made into a tube by hand.



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Bering Tire & Rubber Co., Houston, Texas.
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The Olmsted Company, Inc., Syracuse, N. Y.
Southern Hdwe. & Woodstock Co., Ltd., New Orleans, La.
Atkinson Tire & Supply Co., Jacksonville, Fla.
Central Rubber & Supply Co., Indianapolis, Ind.
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Why Pay More?

Not every $1200 car has a wheel base measuring 114 inches.

The $950 Overland has.

Not every $1200 car has 33 inch x 4 inch tires.

The $950 Overland has.

Not every $1200 car has a full thirty-five horsepower motor.

The $950 Overland has.

Not every $1200 car has a three-quarter floating rear axle fitted with Hyatt bearings.

The $950 Overland has.

Not every $1200 car has a complete electric lighting system throughout.

The $950 Overland has.

Not every $1200 car has the most up-to-date and very best equipment.

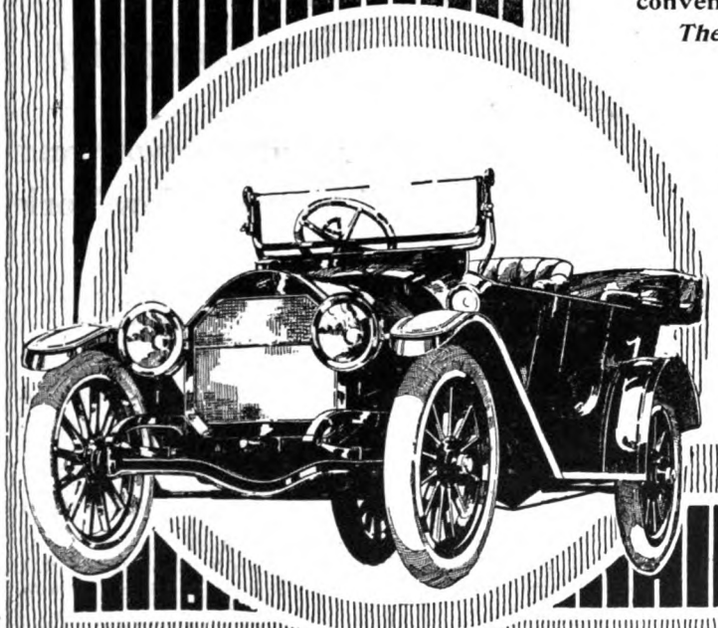
The $950 Overland has.

Not every $1200 car has a chassis as thoroughly, as carefully and as accurately manufactured as any $5000 chassis.

The $950 Overland has.

Not every $1200 car has the utmost in conveniences, comfort, luxury and style.

The $950 Overland has.



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The Willys-Overland Company
Toledo, Ohio

$950 *Completely equipped* **$1075** *with electric starter and generator.*

Prices f. o. b. Toledo

Manufacturers of the famous Overland Delivery Wagons, Garford and Willys-Utility Trucks.

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MOTOR WORLD

Vol. XL New York, U. S. A., Wednesday, July 1, 1914 No. 1

MOLINE TO BUILD KNIGHT-VALVE ENGINES FOR TRADE

Will Still Continue Car Manufacture—Capacity of Motor Plant 20,000 a Year—McMullen to Market.

The Moline Automobile Co., East Moline, Ill., is going to build Knight sleeve-valve motors for sale to the motor trade, this decision having been made by W. H. Van Dervoort, president of the company, last week.

The Moline company, while extending its activities in this way, will not drop its car manufacture, but will utilize to the full the capacity of its motor plant, which will be 20,000 motors per year without any additions.

For the present, Knight sleeve-valve motor activity will be confined to one model, a four-cylinder design, 4 x 6 inches bore and stroke, this being the same motor that so successfully went through the 336-hour test in January at the laboratory of the Automobile Club of America, New York. It is reported that a smaller size is at present going through the engineering department. Deliveries will be made practically immediately on the 4 by 6-inch size.

While the manufacture for the trade will be carried out entirely by the Moline company, the marketing of these motors will be looked after exclusively by Roger B. McMullen, Edison Building, Chicago, and with a branch office in the Ford Building, Detroit. Mr. McMullen for years has been marketing to the manufacturing trade various car parts, such as chassis frames, motors, axles, etc. He thinks that there has not been any more opportune moment for a firm with Moline's reputation as a motor builder, to enter into this work.

The Moline company has a license from Knight & Kilborne covering the use of the motor for Moline cars as well as selling it generally to the trade, and Mr. McMullen feels that there is not any better motor builder in the country than the Moline people.

CHAMBER MAKES PUBLIC THE DATES FOR NATIONAL SHOWS

The dates for the two national motor car shows of 1915 have been made public by the National Automobile Chamber of Commerce. The New York show will be held January 2 to 9 in Grand Central Palace, and the Chicago show January 23 to 30 in the Coliseum and First Regiment Armory.

Victor Tyre to Invade America.

The Victor Tyre Co., Ltd., proprietor of The Challenge Rubber Mills, 15 Carteret street, Westminster, London, S. W., England, shortly will invade the American market with its Victor tires. It is proposed to establish a number of territorial agencies and to cooperate extensively with the dealers thus established.

Riess To Make a Starter.

The Riess Starter Co., East Orange, N. J., has been incorporated at $200,000 by Charles E. Riess, Hupmobile dealer in New York city. A. H. McCausland and W. B. Riley are interested with him in the new company, which will begin deliveries of the new starter about October 1.

Detroit Tire Enters the Trade.

The Detroit Pneumatic Tire Co. has been organized in Detroit to manufacture tires. The plant is now being erected in Springfield, Ill., but headquarters are, for the time being, at 915 Ford building, Detroit.

ENGINEERS WORK TO LIGHTEN BURDEN OF THE CAR DEALER

Efforts to Reduce Capital Tied Up in Tire Stock to One-third.

IDEAL CAR DISCUSSED

Single Wire for Electric Systems Is Recommended—240 Roller Bearing Sizes May Be Eliminated.

To reduce the number of stock tire sizes from more than 50 to about 15.

To reduce the number of tapered roller bearing sizes from 287 to 47.

To standardize the use of one wire instead of two wires in electric equipment.

To determine the merits of electric transmissions.

To weigh the relative merits of 6-volt and 12-volt lighting and starting equipment.

To analyze at length the subject of solid tires for trucks.

To standardize the size of rims for pneumatic tires.

Arguments pro and con on the ideal car.

Better basis for motor car taxation.

These are but a few of the things which came up before the semi-annual summer meeting of the Society of Automobile Engineers, which are of vital interest to every dealer, garageman and repairman all over the country. These items serve to emphasize the practical value of the work of the society, not only to the manufacturer and the engineering fraternity, but particularly to the dealer.

For three days last week more than

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200 members of the S. A. E. played on the sands at Cape May, N. J., and worked in the grand ballroom of the hotel. The semi-annual meeting of the society was formally opened by the president, Henry M. Leland, of the Cadillac Motor Car Co., at 2 o'clock on Wednesday, June 24, and was brought to a close the following Friday afternoon.

In addition to the very important matters mentioned at the beginning of this report, nine other reports, more or less technical in character and of not such great interest to the dealer, were considered and discussed. Also some 13 papers were presented by members of the society and these were discussed more or less fully at the various professional sessions.

But of all the reports that were rendered the report of the Pleasure Car Wheels Division, of which Henry Souther, of the Ferro Machine & Foundry Co., Cleveland, O., is chairman, held the greatest interest for the individual dealer.

As already has been made quite plain, this committee proposes to reduce the number of stock motor car pneumatic tires from upward of 50 to a maximum of 8 sizes, which 8 sizes, it is pointed out, would not only care for the requirements of all present stock sizes, but would cover 85 per cent. of the usual stock over-size tires, for which there is a general demand. To this greatly reduced list there would be added approximately 6 tires of the oversize type.

Just what this would mean to the dealer in tires must be apparent to any one with an eye to see or a mind to reason. It would mean that whereas 50 different sizes of tires must now be stocked to adequately care for the demand, but 8 sizes would have to be stocked, exclusive of the oversizes, under the proposed regime.

Furthermore, the cost of production probably would be lowered, for with fewer sizes less machinery would be required; repair work would be facilitated, for fewer repair molds would be required; it would be necessary to tie up only about one-sixth the capital now tied up in stock.

Not the least important angle of the whole situation is that the tire makers themselves strongly advocate the reduction in the number of sizes. It is a burden upon them to be compelled to produce such a great number of sizes, which differ so slightly from one another and from a standard size which can be laid down.

(Continued on page 12.)

Be an Engineer But First Be a Man

Think Two Thoughts in Place of One, Says Leland, and Live Twice as Long.

"The man who makes two blades of grass grow where only one grew before is a benefactor to the human family," said President Henry M. Leland of the Society of Automobile Engineers, in opening the semi-annual meeting of the society, which was held at the Cape May Hotel, Cape May, N. J., June 23 to 27. That, briefly, was the burden of his address.

"I believe this statement is true of grass," he continued in part. "I think it is just as true of horses or cows or sheep. It is just as true of houses and steamships, and locomotives and bridges, of machines, of stores, of factories, and of anything and everything which meets and supplies a legitimate human need.

"Nevertheless, great and valuable as have been the achievements of the engineer, I believe there is a larger field which he may occupy if he will. This relates to the engineer, rather than to his achievements. To wrest from nature the secrets of matter and forces and to bring order out of chaos is a great satisfaction. To investigate, to contemplate, to labor and bring forth the ideal is the task of the engineer. From the vantage point of my years and my experience, may I suggest to you new engineers of a new industry, that in the whole realm of engineering there is no problem so worthy of your skill and ingenuity, and no need so pressing, as that of producing men, not things? No task is so complex, and no reward is so great, as that which comes to the man who successfully engineers his own life to a higher type of character. In the laboratory of daily life, with the mind, heart and conscience as tools, we should, as engineers of the greatest things, convert our baser tendencies and impulses into the noblest realities.

"To every man who has a real earnest desire to make the most of himself (if that is his aim he is an engineer) and to fill to the full the most important niche to which he may aspire in this world and the next, there is a free course and a fair field. It is great to be an engineer. It is greater to be a man—a great, broad, full-measured man. This is the great calling. This is the great engineering feat, and he who would attain it must—in all life's great problems, in his dealings with his fellows, in his treatment of those beneath him in rank, in his treatment of the weak and unfortunate, in his walk with his equals and superiors, cultivate personal qualities of justice and mercy, fair play and courtesy.

"I have been asked to discuss the comparative efficiency of the engineers of either Germany or England and of the United States. I am not prepared to speak finally of this.

"By way of illustration," he continued, "in a certain contract for a bridge to be placed across a chasm in South Africa, those responsible for building the structure had their engineers draw complete detail specifications of the bridge, and forwarded them to the English contractors as well as to the American contractors. The English contractors immediately set about supplying the identical material precisely as specified, making special each and every piece accordingly.

"The American contractors proceeded upon an entirely different basis. They paid very little attention to the details specified, but immediately submitted another plan providing the same length of span and load-carrying capacity as had been specified, but requiring only standard stock material

"Basing estimates on practically standardized parts made in considerable quantities, the Americans were able to quote a very much lower price and several months quicker delivery of the material, thus securing the order.

"The illustration goes a long way toward showing the difference in some of the engineering and manufacturing methods employed on the respective sides of the Atlantic. So much for standardization in which we excel.

"Let me leave with you Conwell's quotation from Bailey. Bailey was not one of our greatest writers, but, after all, in this he was one of our best:

"'We live in deeds, not years; in thoughts, not breaths;
In feelings, not in figures on a dial.
We should count time by heart-throbs.
He most lives
Who thinks most—feels the noblest—
acts the best.'

"Gentlemen, if you forget everything else I say, don't forget these two lines; for if you think two thoughts where I think one, you live twice as much as I do in the same length of time—

"He most lives who thinks most—
feels the noblest—acts the best."

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Garages May Win Separator Fight

Committee of New York Board of Aldermen Favors Their Case.

The garagemen and dealers of Greater New York made their final and greatest fight against the gasolene separator ordinance at 2 o'clock Friday afternoon, June 26. They appeared with an attorney and expert witnesses before the Welfare Committee of the Board of Aldermen and attacked the separator as an expensive device which will not work if it is installed and for which there is no need. As a result the Welfare Committee has reported favorably to the Board of Aldermen, which will take action on the matter Tuesday, July 7.

Hearing on Repeal of Law.

Technically the hearing was one in favor of an ordinance introduced by Alderman Squires repealing the separator ordinance which has been on the books four or five years. The Municipal Explosives Commission and the Fire Department appeared in favor of retaining the old ordinance on the books and endeavored to convince the committee that gasolene and oil from garages flows in the city sewers in considerable quantities and constitutes a menace to the public safety.

Attorney Charles Thaddeus Terry led the forces of the New York Garage Association, the Automobile Dealers' Association of New York City, the Brooklyn Garage Owners' Board of Trade, the Brooklyn Motor Vehicle Dealers' Association and the American Automobile Association.

Fire Department Outwitted.

At the opening of the hearing the Fire Department and separator manufacturers sought to make their position more tenable by forcing the garagemen to present their side of the case first, on the assumption that answering a man is easier than attacking him. The garagemen opposed this and Attorney Terry occasioned considerable merriment and scored a point when he made a brief opening address and stated that the remainder of the testimony would be used in replying to the Fire Department.

Dr. Russell W. Moore, the Fire Department chemist, stated that in 307 working days there were taken from 47 garages about 3,500 gallons of separator refuse which was 40 per cent. gasolene. He also mentioned three particular garages from which considerable quantities of gasolene and oil had been taken from the drainage in periods of a few hours, but when the garagemen asked him why he did not give detailed reports on the remaining 44 garages no reply was forthcoming, and when one of the members of the Welfare Committee figured that the doctor was getting 11 gallons a day from 47 garages and that this was a comparatively negligible amount from each garage, there was little said by the Fire Department.

The case which was instituted by the Joscelyn Garage against the Fire Commissioner to compel him to issue a permit for a garage in which no separator had been installed and which case was lost by Joscelyn on appeal, was given considerable prominence by the Fire Department. In reply to this Attorney Terry for the garagemen stated that the case had no bearing upon the efficiency or inefficiency of the gasolene separator and did not determine the reasonableness of the ordinance requiring their installation, the decision of the Appellate Division merely stating that the necessity for a safety device rested in the discretion of the Fire Commissioner.

Johnson Condemns the Separator.

President R. H. Johnston of the Automobile Dealers' Association explained to the committee that the amount of gasolene and oil which flows from the garages into the sewers is small and that the separators are so constructed that they are unable to extract gasolene and oil from the soapy wash water as it goes churning through the device. He emphasized that even if gasolene does run from the wash racks of the garages the separator will not catch it and that aside from the high expense of installation the separator plugs up with sand.

He also asked why, if the separators are considered so essential to safety in the garages, they are not installed in garages maintained by the Fire Department itself. He maintained that if the ordinance be allowed to stand the city be required to prove that gasolene in the sewers constitutes a menace to the public safety, that the gasolene comes from garages and that the separators which the ordinance requires will do the work for which they are intended.

Tending to show what happens inside of a separator in actual operation, Gail Mersereau, the garagemen's chemical expert, placed in evidence a graduated tube containing soapy water such as comes from the wash stand; to this he added 10 per cent. of gasolene, shook it up and let it stand. The gasolene separated in a creamy emulsion, which Mersereau stated would readily dissolve with the first onrush of water and pass through the separator and on to the sewer without being separated. This he stated is what happens in any separator that has been approved thus far by the Fire Department; he also stated the not generally known fact that gasolene to the extent of ¼ of 1 per cent. will dissolve in water just the same as salt or sugar and will remain in suspension.

Sewer Men Vague in Information.

Two employes of the Sewer Department testified that the presence of gasolene was noticeable in sewers near garages but were unable to state whether these garages had separators and were somewhat vague as to whether illuminating gas might not have constituted a portion of the odor they detected.

The methods of the Fire Department in insisting that these devices be installed was characterized by Attorney Terry as tyranny; he stated that one man was ordered by the Fire Department to put in the separator or be arrested; the Building Department had told him they would not approve of the construction if he put it in and that if he did so he would be arrested.

The ordinance, Terry declared, was not common sense, that the device was of benefit only to the manufacturers into whose pockets the money of the garagemen went and that as a mechanism for automatically enforcing the law it was a dead and gloomy failure.

Separator Is 98% Inefficient.

He stated that the separator is 98 per cent. inefficient in actual tests and that if the device should be installed in public garages it should also be installed in every private garage in the United States. Several members of the committee seemed convinced of the inefficiency of the device and the unreasonableness of the ordinance; one or two of the aldermen had made personal investigations of the separator's operation and asked questions which seemed to nonplus the witnesses for the city.

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COURT SAYS "NO" TO BID OF SYNDICATE FOR POPE

Classes Credit Payment as Speculation and Frowns Upon It—Business May Be Sold at Auction.

Judge William L. Bennett, of the Superior Court in Hartford, Conn., having declined to authorize the receiver of the Pope Mfg. Co. to accept the offer of $1,800,000 made for the Pope assets in Connecticut and Massachusetts, the offer has been withdrawn. It was made by a syndicate represented by George R. Nutters, of Boston, who stated that he appeared for Daniel Gurnett and James T. Putnam, of Boston, and Carl Bonney, of Worcester.

As no other bidders have thus far appeared, it is regarded as probable that the properties will have to be liquidated by the receiver, and as the bulk of the assets in Connecticut are in real estate and machinery and the demand for idle factories is not keen, the liquidation proceedings will, it is believed, be rather slow.

Under the terms of the reorganization which was to have been effected had the court accepted the offer, a new corporation with $2,800,000 capital was to have been formed and $1,800,000 was to have been paid for the Pope properties. Only $400,000, however, was to be paid in cash, the remaining $1,400,000 to be in five-year 6 per cent. notes secured by a closed mortgage.

Judge Bennett classed this as speculation, inquiring whether the proposition was not asking the court to allow the receiver to sell the assets on five years' credit. The syndicate, however, stated that it was unable to offer more and the reorganization movement ended at that point. Neither the stockholders of the old company nor the merchandise creditors were paticularly impressed with the offer, as the stockholders stood to realize practically nothing and the creditors did not favor being paid in five-year notes.

Following the refusal of the court to accept the offer, the creditors' committee, representing chiefly banks, moved that the plants at Hartford, Conn., and Westfield, Mass., be sold at public auction. Judge Bennett ordered a hearing on this motion tomorrow, July 2.

According to Edward M. Day, who represented the Pope interests and chief preferred stockholders, the Westfield plant is valued at $1,464,270.47 and that there are accounts and bills receivable of $396,280.33 and cash of $61,221.49. At the Hartford factory, he stated, are bills receivable of $142,231 and $49,000 cash.

Chevrolet Buys Tarrytown Plant.

With the object of manufacturing right-hand drive Chevrolet cars for the Atlantic Coast and export trade, W. C. Durant, of the Chevrolet Motor Co., has acquired the old Maxwell-Briscoe Motor Co.'s plant at Tarrytown, N. Y. The Chevrolet company is now operating a plant at West 57th street and 10th avenue, New York city, and another in Flint, Mich., where 35 cars a day are being turned out. The present New York plant manufactures about 20 cars a day. The product of the Flint plant is largely left-hand drive cars.

It is expected that about January 1, 1915, the Flint and New York plants will be operating under one management. The Tarrytown property consists of 10 acres of land with brick buildings compriscing about 205,000 feet of floor space. It is assessed at $267,000.

FISK LOWERS PRICES OF SOME TIRE SIZES

Increased Production Makes Lesser Costs Possible.

Beginning today, July 1, the Fisk Rubber Co., Chicopee Falls, Mass., makes reductions in certain tire sizes. In plain tread casings the reductions apply only to 3 and 3½ inch sizes; all non-skid sizes are reduced; tubes remain the same.

The 30 x 3½ plain tread was $17; now is $16.55.

The 30 x 3 plain tread was $13.85; now is $12.30.

The 34 x 4 non-skid tread was $33.60; now is $31.60.

The 36 x 4½ non-skid tread was $46.35; now is $42.65.

Rebates will be extended to dealers on any stock on hand at the time of the reduction, provided a serial inventory accompanies the application for rebate. These reductions are said to be due to increased production in the styles and sizes affected. The non-skid production has been practically trebled in the last 60 days.

It is the intention shortly to introduce a non-skid tire, in design similar to the present Town Car Tread, which will be known as the "Fisk Red Top." This will be made only in sizes to fit Ford cars.

FISCHER COMPANY ENTERS FIELD WITH A LIGHT CAR

One Standard Tread Chassis to Carry 5 Bodies—Speedster Will Sell for $595 and 4-Passenger Touring $645.

The number of light cars already on the market is soon to be augmented by the addition of the Fischer-Detroit light car, to be manufactured by the C. F. Fischer Co., a new Detroit concern. A single chassis will be built, with 104-inch wheelbase and 56-inch tread, and it will mount five bodies, all of the streamline type.

Model A, two-passenger speedster with five Houk wire wheels, without top or windshield but with standard equipment otherwise, will sell for $595, which will also be the price of the two-passenger touring car. Model C, two-passenger cabriolet with disappearing windows and collapsible top, and model D, four-passenger touring car, single door, with one-man top, will cost $645; and model F, four-passenger sedan, $845.

A four-cylinder Perkins motor, 2¾ x 4, will drive through either cone or multiple-disk clutch and three-speed selective gearset and propeller shaft with Spicer universal joint to the floating rear axle, which will be mounted on Hyatt roller bearings; the pinion shaft will be on double row ball bearings. The motor and gearset are built together as a unit and suspended from three points.

Standard equipment will consist of electric lighting and starting system, speedometer, extra rim, top, curtains and envelope, tools, jack and pump. As has been stated, the speedster model will have no top, and will have wire wheels, whereas other models have top included in the equipment, and wood wheels. Tires will be 30 x 3 on demountable rims.

Goodyear Makes Record in April.

During the month of April the Goodyear Tire & Rubber Co., Akron, O., produced a total of 216,056 pneumatic tires, which it states is a new world's record for tire manufacturing. Of this number, 186,491 were motor car tires and 29,565 were motorcycle tires. The total number of motor car tires for the fiscal year, to the first of may, was 699,342. The figures do not include the company's production of motor truck tires, carriage tires, bicycle tires and its mechanical goods.

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Revisions by Makers of Cars and Trucks

The Premier Motor Mfg. Co., Indianapolis, Ind., has just made public details of its 1915 series of cars with T-head motors—that is,, cars other than those equipped with Weidcley motors. While there are no radical changes in design or construction, there is a drop in price that is decidedly momentous.

There is but one chassis, as was the case last year, and on this is mounted a roadster, 5-passenger and 7-passenger touring bodies; the roadster and 5-passenger car cost $2,385, as against $2,785 for last season's model, while the 7-passenger machine costs $2,435, as against $2,900 for its predecessor. Thus the prices are reduced to the extent of $400 and $435.

It goes without saying that nothing in the way of efficiency or comfort has been sacrificed in bringing about the lower prices. In fact, the cars are practically unchanged. The six-cylinder T-head motor, which has its cylinders cast in threes, has a bore and stroke of 4 x 5½, giving a rating under the S. A. E. formula of 38.4 horsepower. Ignition is by Eisemann single magneto and lubrication by a combination of pressure feed and splash. The power plant is of the unit type, with flywheel completely enclosed, and is hung on a three-point suspension. The motor is cranked by a Remy six-volt starter.

Drive is transmitted through a multiple-disk clutch, three-speed selectively controlled gearset and the usual propeller shaft to the semi-floating rear axle, which is a distinctive Premier construction without trussing; it is made up of a crucible steel housing to which flanged steel tubes are hot-riveted. No keys are used in any part of the rear axle.

The wheelbase is 132 inches and the standard tread is 56½ inches, though a 61-inch tread is optional to meet southern road conditions. Tires are 36 x 4½ and wheels are of wood, though wire wheels will be fitted at an extra charge. Wood wheels may be either 34- or 36-inch.

Equipment is very complete, including one-man top, envelope and side curtains, windshield, speedometer, robe and foot rails, tool boxes, tools, jack, etc. The inside of the body is completely lined with leather and the tonneau floor is covered with a horsehair rug. Front boards and running-boards are covered with cork. Metal trimmings are finished in black and nickel.

Premier Slashes Prices by $400 in One Model and $435 in Another Though Few Changes Are Made—Velie Also Makes Big Cut and Adds Equipment — Stewart Commercials Are Much Simplified But Chassis Price Is Unaltered.

Substantial reductions in the prices of two of its models are announced by the Velie Motor Vehicle Co., Moline, Ill., in bringing out its 1915 line. No radical constructional changes have been made and the line still consists of three cars. Model 14 is a 50-horsepower six at $2,015, a reduction of $340 from the 1914 price of $2,355; model 12 is a 45-horsepower four at $1,750, which is $250 less than the former price, $2,000; and Model 11, a 35-horsepower four, at $1,500, is listed at the same price as last year's car. No changes have been made in the construction of the small four.

Both the larger cars have been equipped with motor-driven tire pumps which form part of the regular equipment. Tire sizes have been materially increased and instead of the 36 x 4 pneumatics used in 1914 the cars run on 37 x 4½ tires all round. The rear tires are non-skids in both models.

The manufacturers state that by virtue of many little paring processes an appreciable reduction of weight has been made in the two larger cars; also the bodies have been made somewhat roomier and the lines touched up here and there to help along their already good appearance. A considerable increase of tire mileage is anticipated by reason of the combination of lighter weight and larger tires.

Complete equipment is furnished, which includes the Gray & Davis electric lighting and starting system. The tops are built to order for these cars; windshields are of the built-in type and have no stay rods; headlights are equipped for dimming when the car is driven in city streets; running-boards are clear and the extra tires are carried in tire holders that are attached to the rear of the chassis.

In bringing the design of its 1500 pound delivery wagon up to date, the Stewart Motor Corporation, Buffalo, has succeeded in eliminating 500 parts from its construction, and the consequent simplification is attended by a decrease in weight and an increase in efficiency. Though many changes have been made they are in details, and the general appearance of the car, with its sloping hood and radiator behind it, is about as it was, though not a little improved. The chassis price remains $1,500.

By way of improvements the power plant has been made of the unit type and mounted on three-point suspension. The main frames are straight. Pump circulation of the cooling water has been replaced by gravity circulation and the radiator placed practically out of sight in the cowl; a draught of air is induced by a belt-driven fan instead of fan-blades in the flywheel.

A glass front and mechanical horn are installed as regular equipment and panel bodies are of aluminum instead of wood. All the more important mechanical units are more easily removed than formerly. Westinghouse electric lighting and starting will be furnished as extra equipment.

The car has a Continental motor with block-cast L-head cylinders, 3½ x 5 bore and stroke; the carburetter is a Zenith and ignition is effected by a Bosch magneto. Power is transmitted through a multiple-disk clutch, three-speed selectively controlled gearset and propeller shaft to the Timken rear axle. Springs are semi-elliptic all round.

The wheels are of wood and are equipped with 34 x 4½ pneumatic tires on Firestone quick detachable demountable rims; the wheelbase is 126 inches. Both sets of brakes operate on drums 17 inches in diameter. Left steer and center control are standard.

Two Car Makers Add Westinghouse.

The electric systems of the Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., have been adopted by the Standard Steel Car Co., Butler, Pa., and the Dorris Motor Car Co., St. Louis, Mo., as 1915 equipment. The Standard company will use a starting and lighting equipment consisting of a six-volt starting motor with electrically operated control switch and a six-volt generator with switches, fuse boxes and ammeter. The Dorris company will install a starting, lighting and ignition system.

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TOURING WEEK SUPPLANTED BY TOURING BOOSTER PLAN

Chamber Stimulating Owner Driving in Northeast — May Make Another Attempt at Touring Week in 1915.

The fact that the National Automobile Chamber of Commerce did not conceive and propagate its National Touring Week plan until May and the fact that the Chicago to Boston non-stop run failed to mature, is held responsible for the necessity of the association supplanting this plan with another. It was originally proposed that club tours be held during the present week but none were staged as a part of the scheme as mapped out.

The Chamber is now circularizing the newspapers in 20 of the larger cities in Northeastern part of the United States, urging these publications to publish local touring maps and recommend that private owners make week-end trips over these routes; ten of these cities have already replied and the work is to be further prosecuted.

In case the newspapers enter into the work, maps and touring data are supplied; had the National Touring Week project been conceived and propagated earlier in the season, it is believed better success would have resulted and the plan may be tried again next year. The Chamber will still continue to boost touring by private owners and will use its influence to induce car owners to make tours throughout the country.

Blood Cyclecar Needs More Room.

The plant of the Blood Bros. Machine Co., Kalamazoo, is to be enlarged; the addition will be used as the assembling plant for the cyclecars which the concern is now making.

Rhineland Head Visits America.

Accompanied by Stuart Shepard, American manager for the Maschinenfabrik-Rheinland, A. G., Dusseldorf, Germany, manufacturer of Rhineland ball bearings, General Manager Paul Bruhl is visiting the American factory, the Fafnir Bearing Co., New Britain, Conn., and certain of the leading American motor car and machinery manufacturers, particularly in connection with worm gear work and worm drives. Bruhl was one of the collaborators of Professor Stribeck in the original research work conducted in Germany some years ago and which resulted in the adoption and manufacture of ball bearings as used today.

Bruhl is well-known in Germany and France as one of the authorities in mechanical and scientific lines, in connection with which his lectures and treaties delivered before the engineering societies have occasioned great interest.

Houpt Gets Larger Territory.

Harry S. Houpt, Inc., metropolitan distributer of the Lozier, has extended its territory to include the Philadelphia district, with Eastern Pennsylvania, Southern New Jersey, Eastern Maryland and all of Delaware. It is likely that R. D. Willard will be the Houpt manager in Philadelphia and that a distributing station will be opened on North Broad street. Willard previously was conntcted with the Pierce and Fiat companies and is now one of Houpt's best men. He formerly resided in Philadelphia and is well acquainted there.

Laidlaw Opens Detroit Office.

So that it may keep in closer touch with its growing Michigan business, W. R. Laidlaw, Inc., New York city, has opened a branch office in Detroit. It is located in the Goldberg building. J. H. Johnson, who long has been with the Laidlaw company, will be in charge.

Van Patten Enlarges Territory.

L. A. Van Patten, Inc., metropolitan distributer of the Saxon, has been given Union, Essex, Morris, Somerset and Middlesex counties in New Jersey as additional territory. These are among the wealthiest counties of that state and subdealers will be appointed immediately.

Motor Car Securities Quotations.

Ajax-Grieb Rubber Co., com.	155	165	220	165
Ajax-Grieb Rubber Co., pfd.	93	100	99	103
Aluminum Castings, pfd.	97	100	98	100
Chalmers Motor Co., com.	132	142	99	103
Chalmers Motor Co., pfd.	98	102	95½	98½
Firestone Tire & Rubber Co., com.	235	245	300	204
Firestone Tire & Rubber Co., pfd.	104	106	108	109½
Carford Co., pfd.	85	95	75	85
General Motors Co., com.	26½	27½	90	92
General Motors Co., pfd.	90	92½	92½	95
B. F. Goodrich Co., com.	26¾	27½	23⅛	24
B. F. Goodrich Co., pfd.	90	92½	86¼	87¼
Goodyear Tire & Rubber Co., com.	294	300	196	172
Goodyear Tire & Rubber Co., pfd.	96	98	96½	98½
Gray & Davis, Inc., pfd.	..	..	95	102
International Motor Co., com.	3	6	..	4
International Motor Co., pfd.	18	25	3	9
Kelly-Springfield Tire Co., com.	..	..	58	60
Kelly-Springfield Tire Co., 1st pfd.	..	..	76	80
Kelly-Springfield Tire Co., 2nd pfd.	..	..	94	100
Lozier Motor Co., com.	15	25	..	20
Lozier Motor Co., pfd.	..	92	30	41
Maxwell Motor Co., com.	2½	4½	13½	1½
Maxwell Motor Co., 1st pfd.	25	30	40	41
Maxwell Motor Co., 2nd pfd.	8	10	16¾	17½
Miller Rubber Co.	..	140	139	142
Packard Motor Car Co., com.	..	..	103	..
Packard Motor Car Co., pfd.	..	..	97	106
Peerless Motor Car Co., com.	45	50	18	25
Peerless Motor Car Co., pfd.	..	96	..	62½
Pope Mfg. Co., com.	8	12	..	1
Pope Mfg. Co., pfd.	33	38	..	3
Portage Rubber Co., com.	..	40	..	40
Portage Rubber Co., pfd.	..	90	..	08
Reo Motor Truck Co.	..	10	10½	11½
Reo Motor Car Co.	..	20	17½	18½
Stewart-Warner Spdtr., com.	..	..	47½	48½
Stewart-Warner Spdtr., pfd.	..	..	98¼	99½
Studebaker Corp., com.	24	25½	28	28⅞
Studebaker Corp., pfd.	80	85	80	83
Swinehart Tire & Rubber Co.	84	86	85	86
U. S. Rubber Co., com.	58¾	59	58	58½
U. S. Rubber Co., pfd.	102½	103¾	102¼	103
White Co., pfd.	102	104	107	110
Willys-Overland Co., com.	55	56	78	81
Willys-Overland Co., pfd.	84	90	92	95

PROMINENT MEN IN TRADE WHO ASSUME NEW DUTIES

Resignations and Promotions That Serve to Place Many Workers in New Places—Few of Them Leave the Industry.

F. C. Millhoff, formerly tires sales manager of the Miller Rubber Co., Akron, O., has been appointed general sales manager.

J. M. Flannery has been made manager of the K. D. Carbureter Co., Cleveland, O., with headquarters at 650 Woodward avenue, Detroit, Mich.

A. J. Pitts has been appointed general sales manager of the Wagenhals Co., Detroit, Mich. Previously he was a newspaper man in that city.

George Peak has taken charge of the retail department of the Oakland Motor Co.'s San Francisco branch. He is well known in motor car trade circles in that city.

Ray Austin, formerly connected with the Studebaker Corporation and the Amplex Motor Car Co., has been appointed assistant engineer for the Grant Motor Car Co., Findlay, O.

Lyle Adams has been appointed sales manager for the Ideal Motor Truck Co., Fort Wayne, Ind. Previously he occupied a similar position with the Adams Bros. Co., Findlay, O.

J. W. Gogarn, formerly advertising manager for R. M. Owen & Co., New York, Reo distributer, has been made sales and advertising manager for N. B. Whitfield, a dealer in New Haven, Conn.

George H. Strout, formerly sales manager for the Haynes Automobile Co., Kokomo, Ind., has joined the Cole Motor Car Co., Indianapolis. For the present he will visit the trade in Southwestern territory.

R. A. Green, formerly connected with the Oakland Motor Car Co., Pontiac, Mich., and more recently with the New York branch, has been appointed territorial manager for Wisconsin for the Grant Motor Co., Findlay, Ohio.

V. D. Lersch, manager of the Goodyear Rubber Tire Co., in Albany, N. Y., has resigned to become sales manager for the Herreshoff Motor Sales Co. The latter is general sales agent for the Herreshoff Light Car Co.

Benton Fremont, formerly connected with the sales force of the New York

(Continued on page 38.)

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Cheaper Taper Bearings

The work of the Society of Automobile Engineers is much closer to the motor car dealer than he imagines, and while the dealer is prone to think that the S. A. E. is but for the engineers, he will find by a little delving below the surface, that it is doing a great work for motor car dealers as well as for motor car makers.

One of the latest activities of the society is that of endeavoring to cut down the number of sizes of taper roller bearings from 287 to 47. At present there is too wide a variety of these bearing sizes. There is not any need for 287 sizes when 47 will suffice. You can go further: The motor car industry is carrying a needless burden when it has thrust upon it 287 different bearing sizes if 47 will serve the purpose just as well.

Generally speaking, our engineers have been responsible for the 287 different sizes, and now these same engineers are setting about to get back to 47, a point they were at years ago. And it is just as well that they should delay no longer.

Too often an engineer thinks that he must use a certain size of bearing which varies by .0001 inch in size from that used by another maker, and while there is not any engineering reason for such a bearing, differing only by such a small margin, yet the bearing manufacturer has been compelled to manufacture the bearing.

Then came another engineer with similar false conceptions of real manufacturing and he added one or two more sizes, until today the total has climbed to 287.

Tomorrow gives promise of a cutting down from this total. The real engineers are in favor of it and the bearing makers are also very much in favor of it. One maker of bearings remarked that it cost his company over $8,000 to carry a different size of bearing, and it is a simple question in arithmetic to calculate the difference to the bearing maker to carry 287 different sizes at $8,000 each, as compared with 47 different sizes at the same price.

Look at the problem from the dealer's viewpoint. His repair department will have to carry a much smaller stock to meet ordinary requirements. The big dealer can readily carry a majority of 47 different sizes, but it is impossible for him to carry a majority of the present 287 different sizes. Then, too, the bearing manufacturer has found it expensive to carry on hand a supply of 287 different sizes. He can carry 47 different sizes in stock, so that a telegraph order despatched in a hurry from any dealer for any size of these can bring a shipment by first mail or express.

Eight Tire Sizes

It has been recommended by one of the committees of the Society of Automobile Engineers that an attempt be made to standardize pneumatic tires by selecting approximately eight different sizes that shall be known as standard sizes, to which can be added about six sizes of over-size tires as now in use, giving in all not over fourteen different sizes, as compared with over fifty different sizes that the majority of the tire manufacturers are building today.

Cutting from fifty to fourteen means a great deal to the tire manufacturers but it also means much to the tire dealer and the car dealer in general. Today, with over fifty different tire sizes, it is impossible to carry stocks of these on hand in many places, but with but fourteen sizes it would be possible to carry a rational stock of such sizes.

While the matter of tire standardization is but a recommendation today, there is not any reason why it will not become a reality within a year or 18 months at the latest. There seem to be few, if any, real obstacles in the way of this rational standardization program.

Tire makers are in favor of it. They are opposed to the present variety in dimensions, which in many sizes has been brought about by whimsical car builders and engineers, who have wanted a different tire size so that their car would be different from a selling rival, or who wanted a little cheaper tire for price reasons only. All of these notions result in unnecessary hardships.

At present over 85 per cent of the tires used are within the scope of the eight recommended standard sizes, a fact which proves that tire standardization is not only a possibility, but that at least forty-seven of the present tire sizes manufactured are for but 15 per cent of the car business, and unquestionably this 15 per cent can be equipped equally well, if not better, with any one of the fourteen sizes that it is hoped the field will be limited to.

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MEMBERS OF THE S. A. E. AND GUESTS GROUPED ON THE STEPS OF THE CAPE MAY HOTEL DURING THE CONVENTION

Engineers Work to Reduce Dealers' Burden

(Continued from page 6.)

The eight tire sizes which the Division recommends are as shown by the following table:

Tire Sizes	Tire Seat Diameter
30 x 3	24"
30 x 3½	23"
32 x 3½	25"
32 x 4	24"
34 x 4	26"
34 x 4½	25"
36 x 4½	27"
38 x 5½	27"

In discussing the report, David Fergusson, chief engineer of the Pierce-Arrow Motor Car Co., Buffalo, N. Y., stated as his opinion that the 37 x 5 size should be added to the list of standard sizes. It is now regarded as an over-size, but it is used by a large number and has been found to be a very good proportion.

E. R. Hall, of the Goodyear Tire & Rubber Co., explained that it was the intent to have all the tire sizes even and that the standardization be taken up with all manufacturers to use even sizes, whereas the manufacturer who puts a 37 x 5 on a 36 x 4½ rim gives no chance for the over-size idea except that the purchaser would then regard the 38 x 5½ as the over-size.

Henry Hess, of the Hess Steel Castings Co., stated that he has run a car equipped with 37 x 5 tires for months on the original air and finds that size very useful, strengthening Mr. Fergusson's remarks. He made the point that by having over-sizes, the report suggests that the user pay extra, and could not see the reason for having a well proportioned size, such as this 37 x 5, made anything but standard.

Mr. Souther agreed that this extra charge point was logical, but pointed out that no matter what size tires are on the car some customers always want something a little larger. If the car be equipped with 37 x 5 tires, some would want 38 x 5½ sizes without real reason.

Mr. Fergusson objected to the 36 x 5 as being a size which is not known, but Mr. Hall stated that this size has had considerable testing and is found to be better than the 36 x 4½ or the 37 x 5 because of better balance.

Mr. Souther said the Division was glad to get the suggestions and explained that even if several more sizes had to be added to the eight proposed as standard it would not be a serious matter. There are at present from 48 to 51 sizes which have to be furnished by the tire people, and the drop to eight or ten is a big one indeed. He deprecated the unfortunate use of very large over-size tires on narrow rims, likening this practice to the big soap bubble which wobbles on a pipe. It is the same with the big section tire which rolls on the narrow rim against the side rings and tends to rim cutting and flexing of the bead.

In speaking of the report, Chairman Souther pointed out that no attempt at

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enforcement of the recommendation would be made before next January, in order to give the manufacturers time to prepare for them. Standard demountable rims are not ready for report, the Division feeling that it needs more light on the subject and more investigation before anything concrete is offered the society.

A good point was made by O. A. Parker, of the Newmastic Co., when he said that the standard rims would be economical to maker and user alike in permitting the use of well-balanced tires. If tires are too large in section they are out of proportion and hence not serviceable.

CUT BEARING STOCK

Makers Favor Plan Which Will Greatly Facilitate Repair Work.

Quite as important to the dealer as the recommendation of the Pleasure Car Wheels Division was the report of the Ball and Roller Bearings Division, of which Howard Marmon, Nordyke & Marmon, Indianapolis, Ind., is chairman.

This report was quite brief, but it is full of meat for the dealer. As already has been pointed out, the principal recommendation is for a reduction of the number of tapered roller bearings which now are included under the term stock, from 287 to 47. That this eventually will be done appears reasonably certain, for the manufacturers themselves favor the reduction.

In this connection it was pointed out by F. G. Hughes, chief engineer of the New Departure Mfg. Co., Bristol, Conn., that it costs approximately $8,000 to produce a new bearing size; he added that he was sure the makers would prefer to multiply this figure by 50 rather than by 300.

The particular value of such a reduction in the number of bearings sizes to the dealer would lie in the greater ease with which specific sizes could be obtained. As would be the case with the production of but eight standard tire sizes as against more than 50, the cost of producing only about 50 stock sizes of bearings probably could be lowered.

Furthermore, to the dealer who operates a repair department, such standardization of bearing sizes would be of inestimable value, for whereas it would be practically impossible for the average dealer or repairman to stock the present 300 sizes, to be prepared for all emergencies, he could easily enough stock 50 different sizes and thus be prepared for breakdowns in any and all makes of cars.

This report has been approved by the Standards Committee but will not become recommended practice until it is brought up before the society as a body and thoroughly discussed. This likely will occur at the forthcoming January meeting.

RECOMMEND ONE WIRE

Hot Debate Waged on Merits of Single and Double Wire Systems.

Ever since electric lighting and engine starting systems first came into general use, the question of the advisability of using one wire with grounded return, as opposed to the all-wire circuit using two wires, has been a mooted one; hence somewhat of a bomb was exploded when the report reading, "The single wire system with grounded return shall be recommended practice," was rendered by the Electrical Equipment Division.

The complete report of the division is as follows, that part of it dealing with the insulation requirements of systems being formally adopted by the society as recommended practice:

"All insulating material used in connection plugs, sockets and similar devices of electrical apparatus for use on gasolene automobiles shall be capable of withstanding for thirty minutes a temperature of 300 deg. F.

WIRING SYSTEM.

"The single-wire system with grounded return shall be recommended practice.

"Note.—It is the intention of the Electrical Equipment Division to recommend practice for designs of fittings for complete single-wire systems of electrical apparatus on gasolene automobiles."

Needless to add, the recommendation of the division that the single-wire system be considered standard, brought forth no little discussion. In fact, this portion of the professional session quickly became the scene of the warmest debate of the entire three days.

Three letters from Leonard Kebler, representing the Ward Leonard Electric Co., W. E. Winship and the United States Lighting Co., each protesting against the adoption of the recommendation were read.

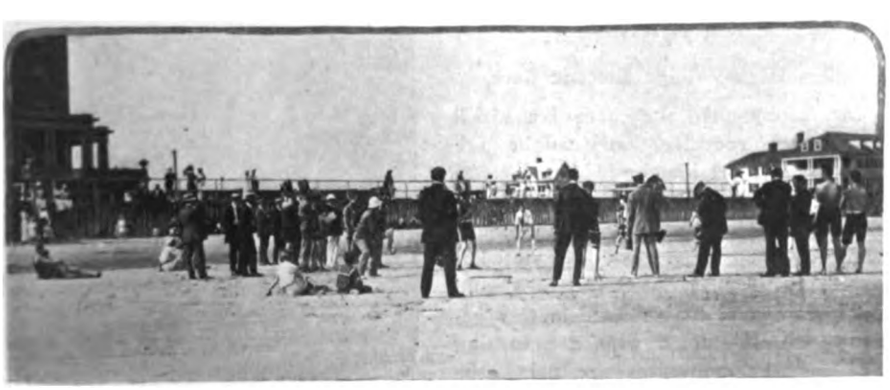
Warns Against Hasty Adoption.

F. E. Moskovics, of Nordyke & Marmon, stated that he wished to warn the S. A. E. against the too rapid adoption of a recommendation, especially one of such a serious nature as this, where such eminent authorities seemed to be divided in their opinions. He cited the case of the Bosch design, where in spite of the fact that in their one-wire system they intended to lay out their design without fuses they were compelled finally to fuse every circuit for safety.

W. H. Conant, of the Gould Storage Battery Co., stated that he regretted that A. L. Riker, the chairman of the division, was not present to throw the weight of his personality and arguments into the matter. He said in part: "This matter has been discussed and postponed now for two years. In the meanwhile

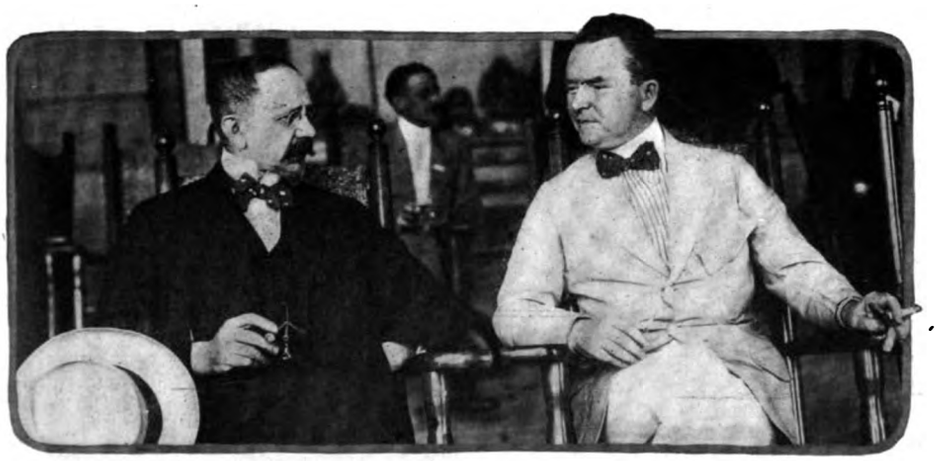


JOSEPH BIJUR AND WALTER ALLEN, OF THE BIJUR MOTOR LIGHTING CO.



ON THE SAND WHERE THE INDIANA INDIANS TOOK THE MEASURE OF THE METROPOLITANS AT BASEBALL.

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E. E. SCHWARTZKOPF, WHO RECENTLY JOINED GRAY & DAVIS, CONVERSING WITH PRESIDENT WILLIAM GRAY

the car makers are doing as they please and adopting rapidly the one-wire system. After consideration of the subject the electrical division has decided that the adoption of this system would be the starting point of much better electrical practice."

Herbert Towle said: "The question seems to me of twofold importance. First, the strongest objection to the one-wire system is in its lack of safety. Any ground causes a flash, and in the presence of gasolene a flash means a fire. Secondly, a sound, durable condition of insulation must exist. Motor car manufacturers are careless in wiring, etc., and are not giving the electrical equipment a chance to show itself to its best advantage."

Mr. Moskovics stated as his opinion that the art had not progressed far enough to settle a question of this nature as yet and to state that one practice is better than another. Mr. Conant retorted that this argument could have been used at the time of adoption of practically every standard. He stated that Mr. Riker was at one time an advocate of the two-wire system, but had finally been convinced that the single-wire was better.

Single Wire Much in Use.

Mr. Moskovics stated that the only difference between Mr. Conant's ideas and his own was that he believed the art had not progressed far enough to adopt the recommendation. R. McAllister Lloyd stated that he believed it would be easier now than a year hence. He stated that 60 or 70 per cent. of the cars now being built have the single-wire system.

E. H. Ehrman, of the Chicago Screw Co., moved that a vote be taken on the matter, and after Mr. Bijur, of the Bijur Motor Lighting Co. had stated himself as being against the adoption of the system, asked him why he had voted for it in committee. Mr. Bijur



GEORGE W. HOUK SMILES

stated that he had never expressed himself as being in favor of the recommendation, but had merely remained silent after seeing the hopelessness of winning over those who wanted it. He said that the fire risk with the single-wire system was not twice as great but 500 times as great and that he believed the underwriters would stop us if the single-wire were adopted. Mr. Bijur said: "Motor car manufacturers do not use the single-wire system because they like it better but because it uses less wire."

Cites High-Voltage Electric Cars.

Mr. Libby cited the case of a $3,500 car which recently had caught fire through a short and on which disaster had been prevented only by a quick removal of a battery lead by an expert who happened to be near. He stated it as his belief that the S. A. E. should not recommend the practice merely because manufacturers who are turning out cars like sausages are using the single-wire system.

Mr. Conant stated that since there were not many in the room and the hour was getting late that the vote be held over. Herbert Towle asked, "Why not hold over another year?" Mr. McMurtry stated that it was his belief that the issue should not be delayed and cited the fact that the General Electric Co. built their high-voltage cars on the one-wire system. To this Mr. Moskovics rejoined that they were driven by experts.

David Fergusson, chief engineer of the Pierce-Arrow Co., said that they had shifted to the one-wire system because of trouble with the two-wire system in getting good lamps and fittings.

A vote was then taken and the motion to pass the recommendation was lost. Mr. Conant protested that fifty voting members were not present.

6 VOLTS vs. 12 VOLTS

Former Styled a "Patchwork" But Is Warmly Defended—12 Volts Favored.

The question of the relative merits of 6 and 12 volts for electric lighting and engine starting systems was the topic, after the others, which provoked the most discussion, and this topic, too, is one that should be of vital interest to dealers and repairmen.

The discussion upon this subject was brought out by a paper read by Albion B. Libby, of the Splitdorf Electrical Co., in which the 12-volt system was strongly advocated. In the course of the paper, Libby stated as his opinion that the 6-volt system "is the result of a great deal of patchwork; while a great many of the rough edges have been knocked off, yet it is the belief of the writer that it never has been an entirely satisfactory job and probably never will be; that is, it cannot be made as satisfactory as a 12-volt system."

W. H. Conant, of the Gould Storage Battery Co., was in hearty accord with



C. W. SPICER, PRESIDENT SPICER MFG. CO.

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the trend toward the 12-volt system and added a caution to the effect that even though the battery plates were designed to be of ample size, consideration should be taken of both the quantity and quality of the electrolyte.

Conant added as his opinion that it is not good practice to put the head and side lamps in series. The headlights have a tendency to flicker, and if one is in trouble both go out.

Concerning the use of fuses he continued: "I believe it to be desirable but question if it is practical. Fuses are peculiar things as I am well aware from knowledge of experiments on fuses which have covered years. It is hard to say, however, what they will do even if they are only limited as closely as mentioned in the paper. Assuming that we have a fuse and it is blown, it means that the circuit is overtaxed, that something is the matter with the motor which makes it hard to crank. The owner or driver of the car will have to search for the trouble and he is sure to close his circuit with a pair of pliers or a piece of copper wire or some other means. I even suspect that some of you gentlemen have bits of copper in the basements of your houses which are doing the work that fuses should do. I agree with the author of the paper that an ammeter should be used and am convinced that the driver of today takes a delight in informing himself on the mechanical and electrical devices on his car."

Seven Advantages of 6-Volt.

Mr. Libby illustrated the light weight of the present-day starting motor by stating an installation of a 22-pound motor on the Winton car he had driven down to Cape May. He said he wanted the lamp builders to build lamps of higher voltages and that he believed that the 14-volt lamp focused as well as the 7-volt type.

Mr. Lloyd said he differed with Mr. Libby and favored the 6-volt lamp on account of its better focusing ability and stronger filament. Mr. Moskovics mentioned the latest Bosch 12-volt lamp and illustrated its filament, asserting that it had excellent focal ability. Mr. Libby said he was an optimist on the lamp situation and pointed to the example of the 6-volt lamp which at one time consumed 4 watts to the candlepower but now was rated at 1 watt per candlepower.



E. C. PECK, OF CLEVELAND TWIST DRILL CO.



C. W. HATCH, PERFECTION SPRING CO.; R. M. OWEN, J. B. ENTZ AND H. C. WILSON, EXAMINING OWEN'S CAR EQUIPPED WITH ENTZ ELECTRIC TRANSMISSION



A. B. LIBBY, OF SPLITDORF CO., AND C. C. HINKLEY, CHALMERS DESIGNER

Mr. Bijur said that he was not committed beyond reason to the 6-volt system, but that he had seven arguments in its favor. These are as follows:

1. From a technical standpoint the 6-volt is better because for a given amount of energy the battery weight is less.
2. The 6-volt lamp filament is stronger because it is shorter.
3. The user of the battery will fill three cells with distilled water before six.
4. The lamps are more easily focused because of the concentration of the filament at the focal point of the reflector.
5. Portable lamps with 12-volt filaments are very breakable.
6. There is less space occupied by insulation on the 6-volt electric lighting and starting system.
7. The punch of the 6-volt motor is just as good as that of the 12-volt. The efficiency of a good motor should easily equal 78 per rent. at 1.5 horsepower.

TRUCK TIRE SITUATION

Need for Compromise Between Solidity and Resilience Brought Out.

Easily a feature of the meeting was the paper by J. E. Hale, of the Goodyear Co., entitled "A General Summary of the Truck Tire Situation." This gives a synopsis of the whole solid tire matter and shows that the situation is really quite complex. The paper is one of the best expositions of the condition of affairs which has been compiled and indicates a great deal of research work on the part of its author.

The question is largely a matter of how best to compromise between the hard tire and the more resilient type. The very hard hubber tire is longer lived, but, on the other hand, it gives the mechanism of the truck more vibration, whereas the softer type, which is best in this latter respect, has a shorter life. The great need is for a better interchange of compositions among the tire people and the giving of the manufacturers better tires in the opinion of truck men.

Tax Cars on Road Destruction.

As the result of a carefully prepared and exhaustive paper on an entirely new idea, by C. O. Edgerton and S. I. Fekete, both of the Hudson company, and dealing with "An Engineering Basis for Taxation of Motor Vehicles," the society has entered upon what was termed the be-

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ginning of another great and good work of the S. A. E. A motion to have the society prepare in scientific form the most workable and possible form of expressing the relative destructive road effect of all road vehicles was carried.

Electric Transmission Discussed.

The paper by J. B. Entz, of the White Co., Cleveland, O., entitled, "Electric Transmission for Motor Cars," which was primarily an exhaustive description of the Entz electric transmission, drew forth quite a little discussion which served to clear up a number of mooted questions.

The Entz system substitutes a motor and a generator for the usual clutch, gearset, electric lighting and engine starting system and does away with these parts. The electrical unit operates as a clutch and also as a gearset and performs the functions of motor starting and battery charging.

Moskovics, of the Marmon Co., asked if Mr. Entz had any data on the amount of weight saved by the use of the electric transmission. To this Mr. Entz replied that so many of the parts of the car were replaced that there was no resulting weight increase of any importance. Herbert Chase asked if the weight could not be further reduced by the use of a light-weight high-speed motor. Mr. Entz stated that he thought this would be feasible by using a greater reduction in the transmission and also that it must be remembered that the weight of the electric starter is included in the plant.

John Heinze, chief engineer of the Northway Motor Co., asked how long the electric transmission would last if it were run continuously at full load. To this Mr. Entz replied that it would be forever. To. Mr. Heinze's inquiry as to the rise in temperature, Mr. Entz stated that the apparatus would never become so warm that the hand could not be placed on the brushes or coils. He further stated that when run as a clutch there are no core losses at all. As first constructed, the armature shaft was non-continuous, but now it is manufactured in one piece.

Five Papers on Ideal Car.

Much interest centered in the consideration of five papers, all dealing with ideals of motor car construction from one point or another. No two of these papers discussed the subject from just the same angle, and it would seem that a clear and uniform understanding of just what was meant by "ideal" would have to be had by all before any such group of papers could take the same view.

Some of the papers of the speakers gave the specifications of what they would personally deem the ideal car, while others took a broader stand and were not specific as to details of this hazy vehicle. On the whole, however, some excellent thoughts were brought to light, and those in attendance at the time were well repaid.

A. P. Brush, of the Brush Engineering Association; C. E. Davis and Herbert Chase read papers on the subject. The first of these dealt more with the correct distribution of material in automobile



MILTON TIBBETS, PACKARD COUNSEL, AND WALTER BAKER, PRESIDENT AMERICAN BALL BEARING CO.

construction, while the latter two were personal ideals.

LAST DAY PLAY TIME

Ball Game and Other Sports Held on Broad Beach—Parade in Costume.

After the business of the meeting had ceased to occupy the attention of the engineers they turned themselves loose on the program of sports that had been arranged by Chairman Moskovics of the sports committee. After the grand parade, in which was incorporated a contest for the most bizarre costume, the cortege broke up and assembled on the hard beach. Coker Clarkson, general manager of the S. A. E., in a modest baby blue Oliver Twist suit, gamboled about the beach without fear, surrounded on all sides by the tribe of Indiana section Indians in full war paint. But loveliest of all was ballet dancer W. H. Conant, the erstwhile silver-tongued orator for the single-wire system in the warmest debate of the professional session. Dressed in a delicate pink lampshade ballet costume, with a mass of much-bleached blonde hair and a plentiful smearing of rouge, which brought into contrast the big black cigar between his (her?) lips, Mr. Conant easily captured first honors for the most grotesque costume.

In the baseball game, which was of the indoor variety, the Indians literally tied their Metropolitan rivals to the stake. The tenderfeet had no show in spite of their brilliant playing, for, wherever the ball was batted, the huge form of an Indian in full war paint would loom up and with the easy grace of months of preparation for this contest would put the Metropolitanite out. The final score of the game was 12 for the Indians and 5 for the Metropolitans. The battery for the winners was Berne Nadall, advisory engineer of the Stewart, Warner Corp., and E. L. Vail, of the Waltham Watch Co. For the Metropolitan section the twirling was done by Herbert Chase, laboratory engineer of the A. C. A., and the catching by D. J. Burns, of the Ward Leonard Co.

Schipper Takes the Championship.

The all-around athletic championship of the society was won by J. Edward Schipper, of The Automobile, with 13 points, acquired by first place in the shot putting and broad jumping events and second place in the base running. Second place was taken by Murfey, a new applicant to the society, with 11 points, gained by taking first place in the swimming and base running matches and third in the 100-yard dash.

A beautiful trophy cup was awarded to Mason P. Rumney, factory manager of the Detroit Steel Products Co., and Miss Marion Bate, daughter of John Bate, president of the Racine Auto Parts Co., as first prize in the dancing contest. Second prize in dancing was awarded to Walter Allen, of the Bijur company, who danced with Miss Margaret Houk, daughter of George Houk, of the Houk Wire Wheel Co. The bridge whist prize, a piece of tapestry, was won by Mrs. A. B. Browne, wife of Arthur B. Browne, consulting engineer.

The tennis tournament has not as yet been concluded. Herbert Chase has reached the semi-finals by defeating Coker Clarkson. David Beecroft, Walter M. Nones, general manager of the Norma company, and J. E. Schipper are still in the tri-finals. As these men are all from New York, the match will be played off in that city.

The bowling trophy, a beautiful cup offered by the management of the Cape May Hotel for the bowler making the highest score, went to R. H. Combs, engineer of the Prest-O-Lite company, who averaged 196 for six games. The fat man's race went to Edward Martin, of the Northway Motor Co.

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Insulting Prospects With That Chill Look

It Is Poor Salesmanship, States Reilly—Show the Man You're Interested Even If He Doesn't Buy.

By Ray W. Sherman

"Hey! Reilly! Got a second-hand car?"

"No, not to sell."

"Well, have you got any to give away?"

"Nope. Only one I've got's my own, and I need it."

"Tough luck! Tough luck!" exclaimed Johnny Wilson, who ran the moving picture show down in the next block. He leaned against the door of Reilly's salesroom, for that was as far as he had got. Johnny was efficient. He didn't go any further than the door because he could holler across the salesroom from there, so what was the use of going any further? Besides, it was a hot day.

Reilly Agrees.

"Yes, it is tough luck," admitted Reilly.

"It is! What do you know about it? It is!" Johnny's pompadour bristled as he swung his hat off his head with his left hand and adjusted his red and black criss-cross-striped necktie with the other.

"Yes, what is it?"

"Just as I get an idea that I'll buy a car I can't find one. That's all!" Johnny pulled out a silk handkerchief and polished off that domey brow.

"There are lots of cars," replied Reilly, "lots of 'em. You must be fussy. What do you want?"

"Oh, one of these little old last year's cars that doesn't cost much to buy or run. Something for two or three hundred dollars, runabout, good condition, good tires—you know! Something like that!" Johnny kept making little ripply gestures with his hat as he talked.

"Is that all? You don't want a car, you want a present."

"But haven't you got anything? Aren't you going to have anything? Don't you know where I can get anything?"

"No and no and no!" shouted Reilly. "I had a good one for you a while ago and you didn't want it. Now you've got to have one by night or bust. What ails you anyway? This movie quick action must have got into your blood.

"Have you tried Mergendorfer's Exchange?" suddenly asked Reilly, as an afterthought.

"Mergendorfer? Mergendorfer? Mer——"



"JOHNNY DIDN'T OFFER TO BUY AND HE GAVE HIM ONE OF THOSE YOU'RE-WASTING-MY-TIME LOOKS"

"Yes, Mergendorfer!" asserted Reilly. "Can't you understand English?"

"That ain't English. It's German." Before Reilly could think up a good answer Johnny rattled on. "Let Tommy Trumbull go over there with me, will you? I couldn't tell whether a car had an engine in it or not."

An Empty-Handed Return.

In an hour Tommy came back without Johnny.

"Well," asked Reilly, "did he get a car?"

Tommy laughed. "Gee, but he's a rattle-brain, isn't he? Did he get a car? No, he did not! He looked at a couple and then got sore at Mergendorfer and came out."

"What'd he get sore about?"

"The way Mergendorfer looked at him!" Tommy laughed again. "Honest, he did," he insisted. "Old Mergendorfer seemed tickled to death and fell all over us when we went in, but after he had showed Johnny a couple of cars and Johnny didn't offer to buy them the old horse trader gave Johnny one of those you - don't - want - to-buy-you're-wasting-my-time looks and Johnny quit. He said he wouldn't take a car from Mergendorfer now if he'd give it away."

"Somebody'll cut the legs out from under him some day!" said Reilly.

Junk Shop Methods.

"He'll never get over these second-hand clothing store methods. If he would wake up and go after business he would find a wonderful field in this town. He's the only used car man that amounts to anything but he doesn't amount to what he should. They ought to take him and old Bastian and a few more and drop 'em in a manhole. They're a pest."

"What did old Mergendorfer used to do?" questioned Tommy.

"Clothing store. His son runs the store now."

"Huh."

"Huh is right," replied Reilly. "He always had that little trick of freezing up on a man and trying to shame him into buying something. He did it to me once and it made me so mad I wanted to paste him in the jaw."

"What were you doing? Buying a used car?"

"Yes and no. I went down there to look around for a car for a friend of mine. I hadn't much hope of getting anything that would be satisfactory from Mergendorfer but I thought it was worth a look. He didn't know who I was at that time and he assumed when I went in the door that I was a prospective buyer. He bubbled over and was tickled

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to death to see me and I was quite well impressed with him and his ways.

"He took me out where he kept his stock of cars and we looked at one or two that seemed to be something near what I was after. But they had faults that were plainly discernable and I didn't want to come right out and tell him his cars were poor buys at the price—and the price was high enough—so I guess he began to think as he did with young Wilson, that I wasn't going to be made a victim right off the bat."

Reilly Got That Look, Too.

"And he began to give you that look," supplied Tommy.

"He certainly did. He made it as plain as day that he was losing interest in me and would just as soon I got out and stopped wasting his time. I did just as Johnny did—I beat it. And I haven't been back. Gee! But I was mad!"

"That's almost an insult."

"It is an insult," agreed Reilly. "Some dealers and salesmen may do it unconsciously but with others it is intentional and they are particular to let the prospect see it. It isn't something they say or do that can be described but is a subtle little something or other that tells the prospect his presence has ceased to be welcome.

"It is the same as telling the prospect 'I'm here to get your money and if I can't get it right away quick you needn't stick around. I'll thank you to beat it and give me a chance to work on some other sucker.' The effect in cases where it is intentional often is to make the prospect feel that since he has monopolized so much of the salesman's time he should square himself by spending some money. That isn't what salesmen's time is for. They are there to show the goods and sell if they can, but no man is under obligations to buy merely because he has asked a few questions about your car.

Disinterestedness a Fault.

"If a salesman displays his disinterestedness unintentionally he would do well to apply himself to the curing of this fault—for it is a fault. Giving the prospect the gate because he doesn't come across right away with the money for a car is not the way to sell——"

"It's one way, isn't it?"

"No, it isn't! It isn't selling, not as selling is known in the motor car business! It may be salesmanship in a Sixth avenue pawn shop—but not in this business! Salesmen should be honest and frank, so they say, but they also should be the best little fakers in some respects that the world ever saw. They should have complete control of themselves and be able to be interested in the prospect every minute of the time they are with him.

"Even if you think a man is going to leave your place without buying a car today you should not inform him that you are not interested in him. That is what follow-up work means in this business; you keep yourself interested in him and keep after him, and even if he buys another make of car the live salesman merely puts the name aside for a time, gives the car a chance to get old and then goes after the man again. But he never shows the prospect that he isn't interested in him."

Merely Building for Future.

"Something like the Overland plan of paying attention to kids."

"Merely building for the future," replied Reilly," and in a thorough common-sense way. The salesman who hasn't a little time to waste on almost anyone who comes in and time to be courteous to everyone, old or young, black or white, is not fully efficient. He may think he is making himself efficient by shuffling off those prospects who don't seem to be coming along very fast but he is way wrong.

"The salesman who wants to get rid of a prospect because it doesn't look like a sale today is skimming the surface.

"With a little continued interest many a prospect would soon develop into a buyer, whereas the display of disinteredness might send him away—and if the display were intentional the salesman is like a highwayman who goes out and hits himself in the head with his own blackjack. He gets nothing and incapacitates himself for getting anything."

Little Things May Mean Much.

"Prospects are funny animals, aren't they?" said Tommy.

"They sure are. You never can tell what little thing is going to enter into the situation and affect the sale one way or the other. A little display of interest toward a man who merely dropped in to ask to use the telephone might so favorably impress him that he would buy a car, while something apparently just as trivial might tip over a sale that was almost made. It——"

"Oh! Look!" Tommy pointed out the door and they both laughed.

"Where'd you get it?" asked Tommy. "What is it?" questioned Reilly, as Johnny Wilson walked in the door.

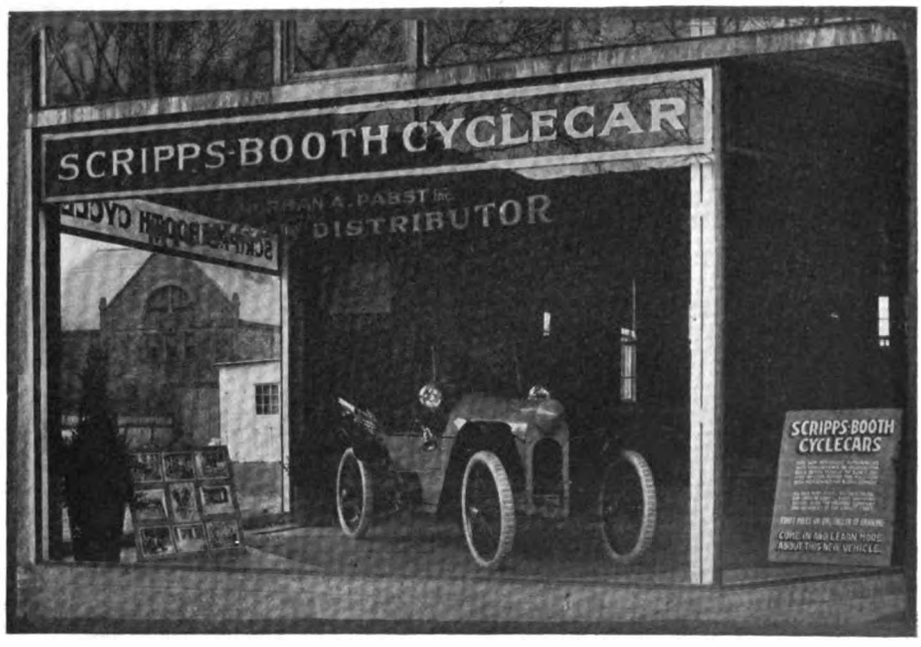
"It's a nineteen—nineteen—I don't know. Maybe it's an eighteen something model for all I know."

"What is it?"

"Gee! I forgot to ask him!" Wilson rushed out to look for a nameplate and the rest followed.

"Don't know a darned thing about it!" he declared after an unsuccessful search for the name. "Fellow came along and I went out and offered him fifty dollars for it—and he took it."

VIEW THROUGH SALESROOM AVOIDS WINDOW GLARE



NORMAN A. PABST, INC., 851 WOODWARD AVENUE, DETROIT, STATES THAT IT HAS THE FIRST EXCLUSIVE CYCLECAR SALESROOM IN THE UNITED STATES—IT DISTRIBUTES THE SCRIPPS-BOOTH IN MICHIGAN—THE DISPLAY IS SIMPLE BUT ATTRACTIVE AND FORCEFUL

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Repairman Got Cash Because He Had To

Trenton Man, Who Needed the Money, Risked Offending Customers and Won Out—Describes Methods.

When Charles R. Sweet went into the repair business in Trenton, N. J.., the first of the year and announced beforehand that he was going to get cash for all his work, he had innumerable friends and acquaintances whose cheery New Year's greeting was an encouraging "It can't be done."

"Holy smoke!" replied Sweet. "It's got to be done! I haven't got money enough to get the business started otherwise. I've got to get the money for the work."

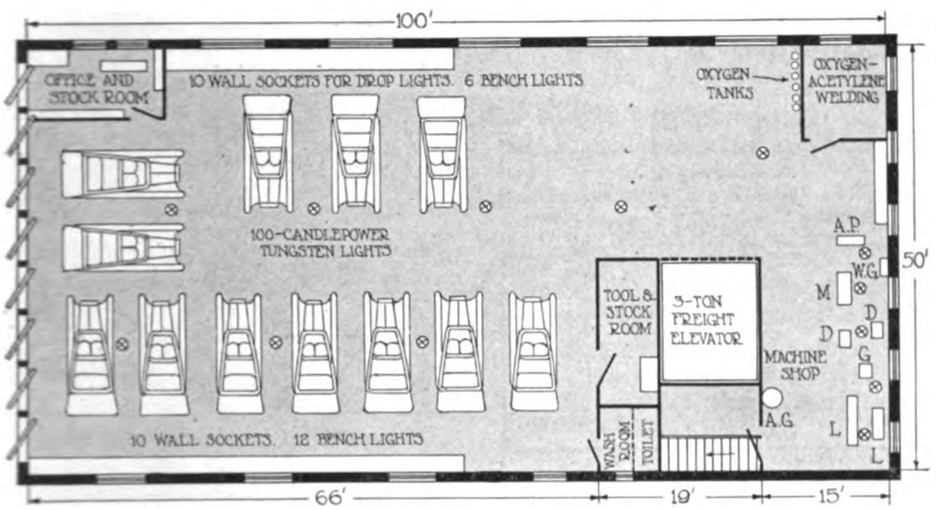
His friends shrugged their shoulders. They "welled" and "hemmed" and talked with their eyebrows as only a true friend can and said they thought they knew where he could get a job if he couldn't make the shop go.

Disappointed Pessimistic "Friends."

But Sweet hasn't applied for that job yet—and isn't likely to. He is running one of the best repair-shops in the state of New Jersey, and some of his best cash customers are among those who put in premature orders for Gates Ajar.

What was a necessity at the beginning of his business has become its mainstay, its backbone, as it should be in every repair-shop. He is getting cash, and while it has not been easy at all times Sweet has been able to make his customers see things from his viewpoint and the hard spots in the road have been left behind.

"Yes, I did have a little trouble with some of my customers," said Sweet, "but it wasn't trouble worth mentitoning.



SWEET'S REPAIR-SHOP IS EFFICIENTLY ARRANGED AND POSSESSES AN UP-TO-DATE EQUIPMENT FOR MACHINE WORK. A. G.—ACETYLENE GENERATOR. L—LATHES. G—GRINDER. D—DRILLS. W. G.—WALL GRINDER. M—MILLING MACHINE. A. P.—ARBOR PRESS

Whenever a job comes into the shop I tell the customer that I ask cash for all my work. Some of them weren't used to it, but they are coming around all right.

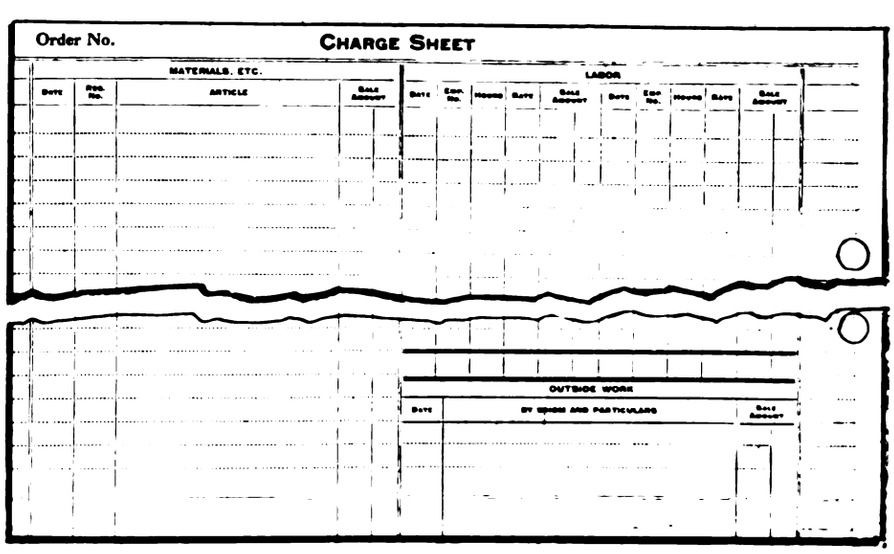
"There was Blank, a rubber manufacturer; he brought his car in for overhalding and the job came to $175. When he came to get the car he didn't warm up to the cash payment plan. I said, 'Mr. Blank, I can't do business other than on a cash basis; I can't afford it. I haven't got capital enough to swing a credit business. I've got 9 men working in the shop and they want their money every week; in fact, some of them have absolutely got to have it, and I want them to have it.

"'On a credit basis I am not going to be able to pay them all off on Saturday night. We can do the best work here that can be done in the state of New Jersey and we make no charge that is not right. We have overhauled your car and your bill will show just what every item of expense is for. We supply parts and material at a right price and charge 60 cents an hour for labor, and there is no overcharge at any point. If you don't want to pay cash I will add 10 per cent. to the bill and you can let it run.'

Showed Wisdom of Paying Cash.

"He said, 'Well, let's take a ride in it and if she's all right I'll give you a check.' We drove down to his office. He was well pleased with the car and went into his office and gave me a check. Then I said, 'Now, Mr. Blank, which would you rather have done—pay for the work now or let it run and pay $17 more?' He was a very satisfied man and I don't think will ever again fail to see that there are advantages on both sides of this cash business.

"Then there was one of our Trenton bankers. He shied a little at paying cash.



DETAILS OF REPAIR WORK ARE RECORDED ON THIS SIDE OF A REPAIR-ORDER CARD—IT IS PRESENTED WITH THE BILL

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But when I brought it right home to his own business and asked him how he would like to have me asking credit at his bank all the time he saw it differently. They can all see it when it's explained to them. The trouble is they never have paid cash for repairs and they have to be educated to it."

Merely having the money to pay his men and run his business is not the only advantage to Sweet in demanding cash; it cuts his overhead. He has no bookkeeper. Although Sweet takes off his coat and works in the shop with his men when occasion demands, he is his own bookkeeper and stockman, but the time he spends keeping books is so small as to be negligible. His only book is his cash book and in this he enters the money that comes in and goes out. It is easily balanced and is an accurate barometer of business condidtions.

Little Bookkeeping Is Necessary.

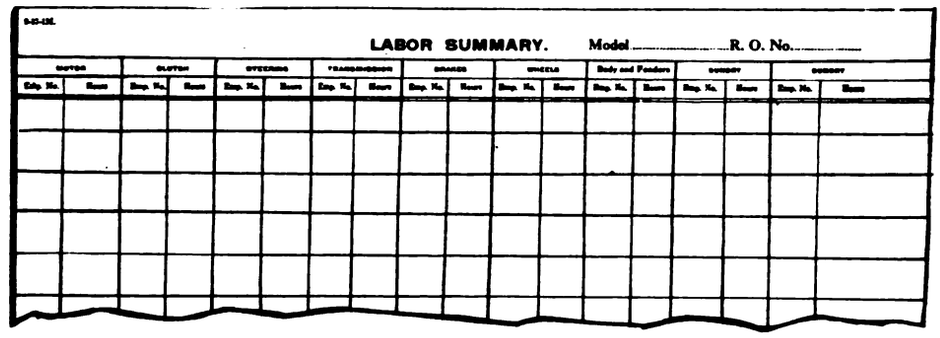
Aside from this, he has repair orders and time cards, but little bookkeeping is attached to this; after a job is paid for and leaves the shop, all the records of the job are filed in a big envelope and the envelopes are filed in a drawer alphabetically; there isn't even an index. The envelope is its own index.

The only deviation from the cash policy is in work done for the city of Trenton and the state of New Jersey; this is carried on a memo for 6 days and the reason cash is not obtained is that the repairman has to await the unwinding of the necessary amount of red tape before his bill can be paid. But there is no real objection to this amount of credit, for the money is always sure and regularly paid.

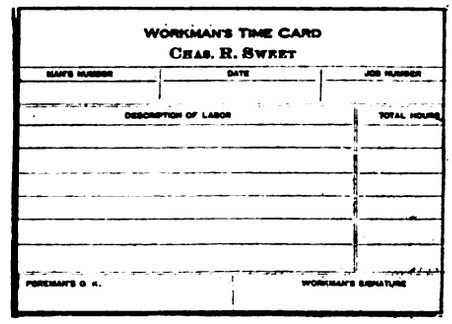
When a car comes into the shop for work and the owner asks how much it will cost, Sweet never makes a price. He may say "About $17," but never "I'll do it for $17." Exact estimates are taboo, and the same thing goes with promises. The most an owner can get out of Sweet is that the job probably will be about so much and that the shop will do the best it can and ought to be able to get it out in a certain time if nothing happens. But there are no exact promises or estimates.

"Estimates and promises are bad things," said Sweet. "I can make a pretty good estimate as a general rule, but I don't do it. If a man wants to know what a job will cost I tell him I can't tell him until I have looked at the inside of the car, but that it probably will be about so much. If he insists on an estimate, I tell him that if I take the work on contract the only thing I can do is to set the figure high enough for safety and then go ahead and do, say, $75 worth of work and then quit—and I don't believe in that. I want to do a good, complete job or none at all.

"But when I do make these approximate estimates, they are generally near the mark. I have had them run a few dollars under and a few dollars over. One of $175 came to $172 and another to $188."



THIS IS THE DETAILED SUMMARY OF THE WORKMAN'S TIME—IT SHOWS WHAT EACH MAN DID AND THE HOURS SPENT



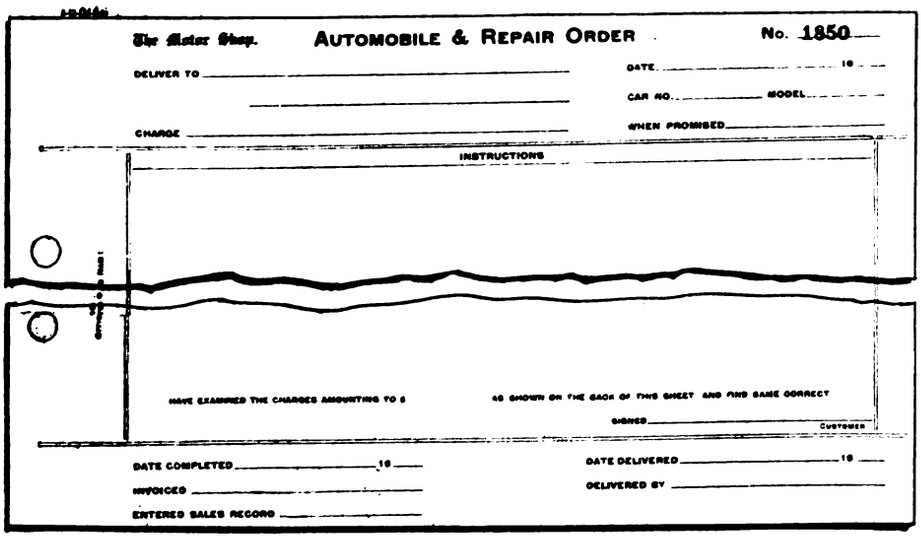
EACH WORKMAN'S TIME IS ALSO RECORDED INDIVIDUALLY

Enters Work on Repair Order.

When a car is received, the work to be done is entered on a repair order—shown herewith—and the customer is required to sign an authorization for the work. This is comprehensive and covers all parts and material necessary. Three copies are made. The original goes to the office file. The duplicate remains with the foreman, and the triplicate, which is of tag board, is tied to the car. The original is white, the duplicate yellow and the tag board of cardboard color.

The back of the yellow or duplicate order blank contains further record space; here are entered by the foreman the materials and parts used, the labor, time and any outside work—which is little. The labor column on the back of this sheet contains a record of the date, employe's number, hours worked, rate and total charge to the customer. Besides this, there is a "labor summary" sheet which is ruled for labor on the different parts of the car. This shows the customer what part of the car the men were working on during the time charged up on the back of the yellow sheet.

Each workman has a daily time card; this—it is shown herewith—gives his number, the date, the job number and what he has been doing during the day.



THIS IS THE OTHER SIDE OF THE CARD SHOWN OPPOSITE ON PRECEDING PAGE—IT IS CUSTOMER'S ORDER AND O. K.

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It is signed by the workman and O. K.'d by the foreman. Thus, when a job leaves the shop the whole record is at hand, and after the car has been paid for the work record is put in the big envelope and filed and the cash received is entered in the cash book. That ends the transaction.

Wasn't Obliged to Stock Shop.

Sweet may be said to have stumbled into a business in one respect in that he was not obliged to fit up a shop; he is located at 636 East State street in a 4-story building erected by The Motor Shop, a dealer and garage operator. The building was completed about a year ago and the shop was conducted by The Motor Shop until the first of the year, when it was turned over to Sweet; he leases the shop, equipment and all, and does all the repair and service work for The Motor Shop, which sells the Cadillac, Mercer and Overland, Mack and Saurer trucks and Stewart delivery cars.

Sweet was able to get the shop because of his previous experience in New York City and because he was known to be an expert and practical repairman.

The establishment into which he walked is well equipped; in fact, the proprietor challenges New Jersey to produce a better equipped shop. He has a 36-inch-gap lathe, made by the Barnes Drill Co., Rockford, Ill.; one Rivet precision lathe, for fine valve work, etc., made by the Fanueil Watch Tool Co., Boston; a Universal grinder, made by the Anci-Milling Machine Co.; one small and one back-geared drill press; a milling machine; an arbor press; a traveling floor crane; a wall grinder and buffer; an acetylene generator for oxyacetylene welding, made by Messer & Co., Philadelphia; a welding outfit; block and chain hoists; 120 running feet of work benches, and 12 vises. Oxyacetylene welding is made a feature of his business.

Equipment Is Valued at $3,000.

All this is contained in a room 50 feet wide and 100 feet long. It is a top floor, has excellent skylighting and has about 25 feet of head room in the center. The roof is of low pitch. A big freight elevator carries cars to the shop from The Motor Shop's garage floor. The total machine equipment is valued at $3,000.

The nine workmen are paid an average of 40 cents an hour and the charge to customers is 60 cents, except that service work for The Motor Shop is at 50 cents an hour because of the close relations between the two establishments. Sweet's rent includes light, heat and everything else which makes a fixed and known overhead.

His stock is largely of Cadillac parts, because most of his service work is connected with this line of cars; he carries about $2,000 worth and plans to have on hand almost anything a man can ask for. Small parts are stocked in quantities, but as to fenders, radiators, etc., he carries generally one of each part and orders as his stock is exhausted.

All parts are stored and listed by their numbers in the Cadillac company's parts catalog; they are stored in bins and compartments in a small room in one corner of the shop, the numbers running consecutively where possible. In the small parts bins, of course, some consecutive numbers are missing because they attach to larger parts which are in another location. This parts catalog is a stock room catalog as well.

Graduated from a Drug College.

Sweet is a college graduate, which might lead one to remark, "No wonder he's a good mechanic!" But the remark falls flat when it is added that it was not an engineering college from which he graduated but the Albany College of Pharmacy; he was turned out a full-fledged druggist.

He is 31 now. He graduated in 1900, went to New York and got a job in a drug store; and he worked there five years. Then he decided that this wasn't as promising a field as it might be, so he burned his bridges behind him and started all over again. He went over to the Packard branch and took a job which he hoped would make a salesman out of him. The first duty assigned him was somewhat different from standing. starched-up and stiff, behind a drug counter. They sent him to the shop. The foreman gave him a broom and told him to sweep the floor.

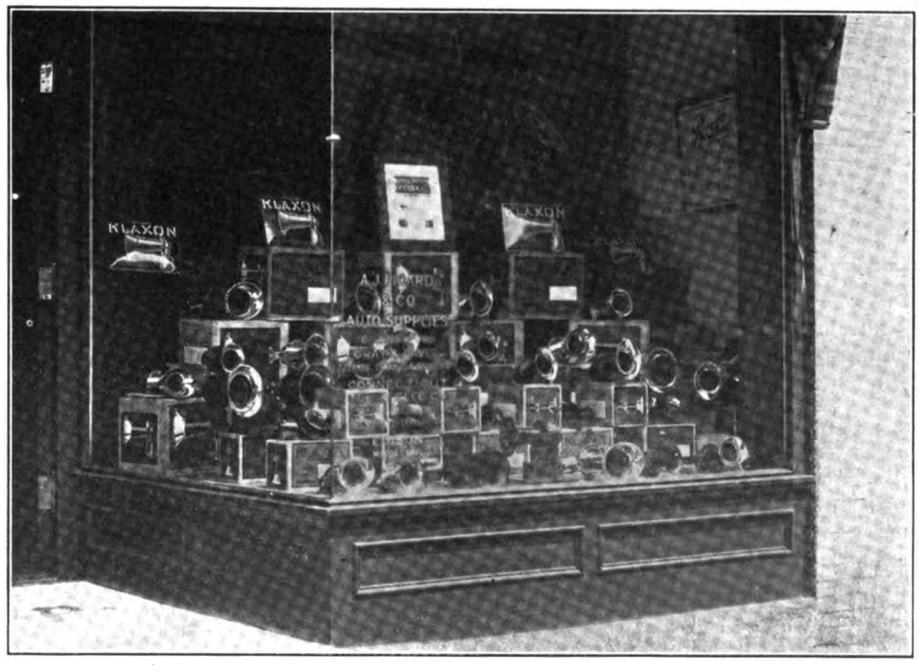
First Job Was Sweeping Floor.

Showing much as to why Sweet is getting along well in life is the fact that he gave the floor one of the best sweepings it ever had. Then he graduated into repair work, but all the time kept asking for a chance on the salesroom floor. But a wise-headed old foreman told him that the time was coming when the expert repairman would be very valuable.

He worked in other New York shops as time went on, firm in his belief that he might just as well be a good repairman as a good anything else—and he liked the work.

One of his principles of business is to work up a high-class trade. "I want Packards, Pierce-Arrows, Peerless and such cars for my work," he said. "I want the best. The best cars demand the best work and that is what I want to turn out. If a man comes in with a cheap old car and wants to pay about $10 for a cheap job I do my best to put him off and avoid the job. I don't want that kind of work going out of my shop. It won't help me build a reputation."

SILENT BUT EFFECTIVE DISPLAY OF KLAXON NOISE MAKERS



A. J. PICARD & CO., 1720 BROADWAY, NEW YORK CITY, BUILDS MANY DISPLAYS, GENERALLY EMPHASIZING A SINGLE ARTICLE OF MERCHANDISE

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RECENT DEVELOPMENTS in ACCESSORIES

Spark Plug For Double Ignition.

A spark plug that may be used in the ordinary way, with a single wire or with two wires instead of having one pole grounded, or for double ignition with two plugs in series, is to be manufactured by the Power & Efficiency Co., 137-39 East State street, Trenton, N. J.

Outwardly the plug differs from the conventional type in that there are two binding posts set horizontally instead of one vertical post, while at the cylinder end there are two points connected with the binding posts through two electrodes running through the porcelain insulation.

As is shown at A in the accompanying illustration the end of the porcelain is cut away to a wedge shape with concave sides. The upper end of the porcelain is protected by a cap, C, of a special insulating material that will not crack or break under any ordinary conditions.

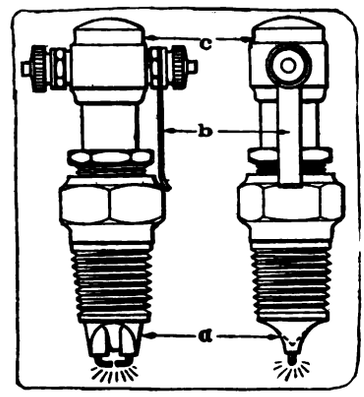
When the plug is to be used as an ordinary plug for single ignition, one of the binding posts is grounded to the body of the plug by a conductor, B. If the cylinder is fitted with two such plugs the idea is to remove the conductor, B, from one plug, attach a wire in its place and run it to the binding post of the other plug, which is used with the conductor in place. This gives simultaneous sparks at both plugs. The manufacturers state that the plug will be made of the best materials throughout. The list price will be $1.

Steam Vulcanizer That Is Portable.

A small vulcanizer that can be carried in the tool box and weighs but 4 pounds but which employs the principle of transmitting heat to the work through steam, has been brought out by the Positive Supply Co., Davenport, Ia., to which company has been issued United States patent No. 1,099,112 covering the device.

The vulcanizer consists of a box divided into two main compartments, one for gasolene and the other for water, with a cover which goes over both compartments. To use the vulcanizer on a casing repair, it is chained against the tread, as shown in the accompanying illustration, with the water compartment next to the tire, and the gasolene is ignited and allowed to burn out.

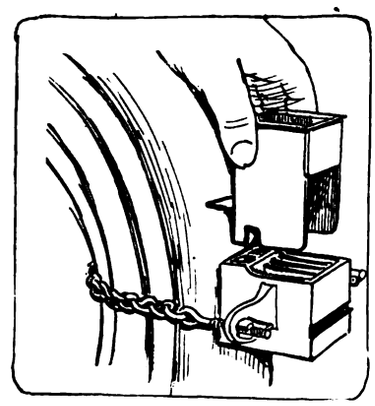
The heat is maintained practically constant, after the maximum temperature has been attained, the water preventing the burning or over-curing of the job. Tubes can be repaired also, and the device will vulcanize an area of 8 square inches at one setting and larger areas by changing the setting. The complete outfit is packed in a box and the list price is $3.50.



DOUBLE ELECTRODE SPARK PLUG

Fabric Belts For Ford Fans.

Endless belts for driving the cooling fans on Ford cars are made by the C. & B. Hinson Co., Grove and Liddell streets, Cincinnati, O., by a process which is claimed to give unusually good results. The belts are woven by special machinery of a combination of linen and cotton fabric tape, wound into four plies and stitched with six rows of linen thread and treated to make them waterproof, oilproof, heatproof and unshrinkable and unstretchable. The makers state that they are 50 per cent. stronger than leather of double their thickness. The belts retail for 25 cents each.


POSITIVE PORTABLE VULCANIZER

Belting of the same fabric as the endless fan belts is also supplied in any width and in any length from 10 feet up. List prices are 16 cents per foot for ¾, ⅞ and 1-inch widths, and 20 cents per foot for 1¼ and 1½-inch widths. This belting has the same qualities as the fan belting.

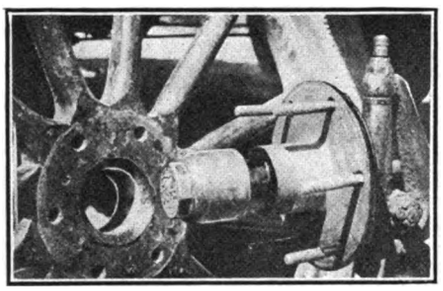
The same company sells an alligator belt fastener for joining the ends of driving belts for driving machine tools. The fastening is made in two parts, as the accompanying illustration shows, both being alike and fastened to the ends of the belt. The serrations are run together and a steel or rawhide pin inserted, the whole forming a hinge that permits the belt to grip closely and which is as smooth on one side as it is on the other. The lacing is applied with a hammer, no other tool being needed, and comes in lengths of 8 inches, which can be cut to fit any width of belt. Lacing for belts 1/8 to 5/32-inch thick costs, list, $1.50 per box containing enough to lace 32 1-inch or 16 2-inch belts.

Making Ford Wheels Demountable.

A device by means of which ordinary Ford wheels can be made demountable has been developed and placed on the market by the Allen Machine Co., detroit, and is furnished in sets, which include an extra wheel and the necessary parts for making all the wheels demountable. To remove a wheel fitted with the Allen device it is necessary only to unscrew six cap nuts, when the wheel slides off easily; the replacement is a reversal of this process, and there are no tight parts to make the operation difficult.

The essential feature of the Allen appliance is a metal ring located back of the inside hub flange and carrying six bolts which pass through holes in the flange and through the hub of the wheel. These bolts take the place of the ordinary hub bolts, which have their nuts on the inside. The unscrewing of the special nuts permits the wheel to slide off, leaving the bolts in place; the metal hub, with its ball bearings, is not disturbed. The accompanying illustration shows a front wheel just removed from a hub that has been fitted with the Allen attachment.

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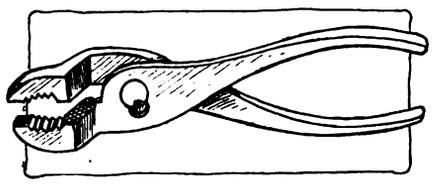


ALLEN FORD WHEEL ATTACHMENT

Slip-Joint Pliers with Offset Jaws.

Convenient as are the ordinary slip-joint pliers for general work, a method of improving them has been hit upon by H. D. Smith & Co., Plantsville, Conn., the new construction adding utility without sacrificing the original good points.

Instead of making the jaws straight, as is usual, they are offset, as the accompanying illustration shows. The angle thus formed permits the tool to be used in a number of ways that would otherwise be either inconvenient or altogether out of the question. For instance, a pin or a nut can be gripped when in a recess or depression, or the jaws can be tightened on an object so close to a



SMITH'S OFFSET JAW PLIERS

surface that without the offset the operator's knuckles would be scraped.

In pulling cotter-pins the heel of the offset often can be used as a fulcrum and the pliers used as a lever to draw out the pin. Other uses will readily occur to anyone who uses such tools.

As for the construction of the pliers—which, by the way, are styled the "Gittatit" pliers—they have their jaws checked at the points and in the offset, and the usual teeth are cut to give a sure grip. The part close to the joint is formed so that is constitutes a powerful wire cutter. The tool is well finished, with polished jaws, and is 7 inches long over all. The list price is $5.50 per dozen. They are packed in boxes of half a dozen and in cases of 12 dozen.

Transimeter Hub Odometer.

A hub odometer that is provided with unusually good protection against accidental damage is manufactured by the American Taximeter Co., 735-737 7th avenue, New York, under the name of "transimeter." The device can be applied to most of the hubs used on pleasure or commercial vehicles, or can be supplied in mountings to fit any hub.

The counter is seen through a heavy glass plate recessed in the end of the hub cap. The construction of the transimeter is shown in the accompanying drawing of what the makers style the dreadnaught type on account of its extreme strength.

The special hub-cap, which is made to fit any make or model of heavy car, has rounded walls ¼ inch thick and a central chamber B in which the counter is mounted with its operating mechanism. The collar C is screwed into the housing, and the counter and the disk D, which form a unit, are free to turn in a bearing in the collar. A pin E projects from a hole drilled in the end of the axle and is pressed by a light spiral spring into a recess in the disk D; this forms the odometer drive.

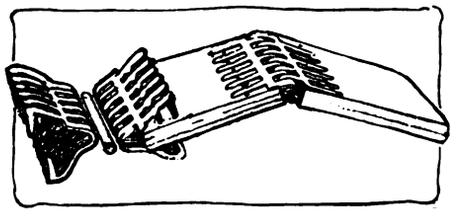
When the wheel of the car turns the hub cap of course turns with it and the collar C, being fast in the cap, also turns. The odometer A, however, is held from turning by the pin E, which is mounted in the axle and which does not turn. The location of the pin is such that the figures on the face of the counter are horizontal.

The dreadnaught type is supplied for heavy trucks operating in dense traffic, where the risk of striking the hub cap is considerable. For less strenuous service the A type is made, and for pleasure cars the XX type. The three models differ only in the mountings.

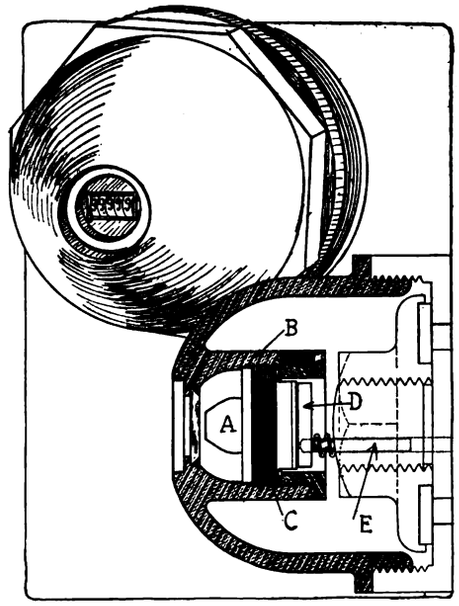
The Type A transimeter has a steel casing ⅜ inch thick and is lighter and considerably less bulky than the dreadnaught. Type XX is still lighter and smaller than type A and is of a size appropriate for pleasure cars and light delivery wagons. The casing is of white vanadium bronze, ¼ inch thick and highly polished.

If it is desired to fit the transimeter to an existing hub cap the work can be done without great difficulty, provided the cap is not too light or otherwise unsuitable for the purpose, in which case a special cap would have to be used. Or, the manufacturers will do the fitting at a slight advance in cost.

The counter registers to 10,000 miles in tenths of a mile and repeats. It reg-



HINSON STEEL BELT LACING



CONSTRUCTION OF TRANSIMETER

isters whether the car is moving forward or backward and is always easy to read because the figures are always horizontal. All the wearing parts are of hardened steel and bronze, and special means are provided for lubricating with chronometer oil. Dust and dirt cannot enter, and it is perfectly safe to turn a hose on the instrument when properly installed.

Owing to the lightness of the parts they are not subject to damage from vibration, and wear is exceedingly slight because no gear in the counter turns more than once per mile. The instrument cannot be damaged by being telescoped by the axle end through improper adjustment because of a hardened steel ring which acts as a stop.

The list price of the dreadnaught instrument, ready to screw in place on the wheel, is $25. Types A and XX cost $16.50 each, unmounted; if the purchaser sends his own hub cap the instrument will be supplied and mounted for $18. A special type for Ford cars and other small machines lists at $15.

Lubrication for Squeaky Springs.

A method of lubricating spring leaves that is said to possess several advantages over the usual plan of prying the leaves apart and inserting graphite grease or oil, is suggested by the Joseph Dixon Crucible Co., New York. The idea is to mix flake graphite with gasolene to the consistency of a thin paste, and apply it to the vociferous parts. The gasolene soon evaporates, leaving the graphite where it is most needed. There is no messy stuff to work out, smear things up and collect dust, as is likely to be the case if oil or grease are used.

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WIDE-AWAKE MERCHANDISING

CUT PRICES OF LASTING HARM TO MAN WHO CUTS

Loss of Customer's Respect One of Greatest Come-backs—Buyer Ever Inclined to Think His Purchase Is Not Right—It Cannot Be Kept a Secret.

The dealer who **does not** cut prices not only wins the respect of the customer but also that of the salesman, whether it be his own salesman or a competitor's, and is likely to turn both into boosters.

There are all kinds of ways to cut prices. The desire to save money is just as old as the human race. It pops out in every walk of life and the man who can "put it over" is going to do so by some means or other. But after he has secured his bargain he often does not feel so sure that it is a wonderful bargain after all and he wonders if something has not been left out to make up for the short price.

Thus the dealer who makes a sale at a cut price in order to "introduce" his goods, instead of making a booster that will help him in future sales, frequently finds that he has manufactured a very neat boomerang that is eternally hitting him in the face.

Customer Boasts of His Shrewdness.

Part of the satisfaction on the part of the man who buys at a discount is the satisfaction he gets in boasting to his friends of his shrewdness. Thus the cut price is found to be well advertised even though it be given as a great and confidential concession.

A certain electric car salesman in Chicago, who had met with more than usual success, met one of his customers who wanted a big six-cylinder car. "What shall I buy?" asked the customer. The salesman named three well-known makes.

Then the customer suggested that the salesman go over and interview the three dealers and see which one he could buy with the dealer's discount off. If the salesman was successful the customer would split the commission with him.

Two Dealers Said "No" Quickly.

The salesman made the rounds of the three places. He did not want the commission but he did want to help this old customer of his any way he could. He went around to the Pierce-Arrow store and it took less than two minutes for him to find out that there was positively nothing doing.

"I knew it before I went there," he said. Then he visited the Packard with no success. "Wouldn't even listen to me," he said. Then he struck the third man whose car he recommended and much to his surprise got the dealer's discount.

The man bought the last car. It was a good car. But he was never satisfied with it. Why? Because he really bought a **price.** He took the car because he could get it at a reduction off the list—and at the end of six months he sold it and bought one of the others.

Lost Good Customer Forever.

There was absolutely nothing the matter with the car, but whenever he had the slightest trouble he thought of the cut price and wished he had purchased some other car. In this case the concession which the dealer made hoping it would bring him the trade of a powerful customer, actually bars him from ever getting the trade of that man. One of the dealers who stood pat eventually got the business.

And more than that, the electric car salesman proved a good booster for both.

WEAVE UNITS OF YOUR ORGANIZATION INTO AN EFFICIENTLY WORKING BODY

Can It Be Improved?—Ask Yourself the Question—Organize.

How is my organization—my sales organization and my service organization? What can I do to improve and strengthen it? How can I add efficiency?

That is the big question for the average dealer to put to himself as he enters upon the 1915 season. For upon his organization more than upon any other single element depends the measure of success that will be his during the coming year.

The finest salesroom, the best advertising and the greatest car value avail little if they are not backed by efficient sales and service organization.

Organization means the weaving of a number of units together so that they work for a common purpose. It means the proper distribution of responsibility to secure the highest efficiency from all.

Make Each Man Enthusiastic.

It means heads of departments with well defined authority. It means every man from the top down impregnated with the carefully mapped out policy of the concern. It means teamwork of the best sort.

Thus upon the answer to the question suggested in the first paragraph depends the satisfactory analysis of the 1915 figures. If there are weaknesses anywhere now is the time to correct them.

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GETTING LINE ON PROSPECTS

Ways Are Numerous and Opportunities Are Many.

"How do we get prospects?" repeated a well-known dealer to the Motor World man.

"That's a pretty hard question to answer. We get prospects from so many sources. Perhaps, though, the biggest source for getting prospects' names is the local automobile show. Our salesmen are all there every night and they get all the names they can possibly take care of for some time.

"Our next largest source is from buyers of our cars. Our salesmen look after buyers very carefully. They make friends of them. They cultivate them. Often we have had a customer drive in here and ask the salesman to go with him to call on a prospect that he thought ought to have one of our cars. Whenever anything like that happens the salesman always asks the customer to let him drive.

Keeps Good-Will of Owner.

"On the way he may notice that the carburetter is not working perfectly or some other part is not as it should be. He calls the owner's attention to the matter and tells him to bring the car down and he will fix it up, etc. That makes the customer still more friendly.

"Then we have noticed that one doctor will tell another and so on. When we sell a man in any particular line of business we often ask him if there isn't someone in the same line that he would like to see driving one of our cars. We sold two civil engineers, two lumbermen, two contractors and two dealers in building materials as the result of two such sales leads.

"People come into the store and look at the car and leave their names. And we get a good many inquiries sent us by the factory that we always follow up very carefully. But it is impossible for me to tell all the ways we get them. Just the other day our milkman gave me a live tip. Knew I was in the business and had heard someone talking car and boosted for me."

"Positive" and "Possible" Prospects.

One Western dealer who values the time of his salesmen very highly has classified his prospects into two general classes. One of these classes is styled "possible prospects" and the other "positive prospects." All the work on "positive prospects" is done by the regular salesmen; indeed their work is confined to "positives" exclusively.

"Possible prospects" are followed up by "student" salesmen; that is, young, ambitious salesmen who are in training for a place on the regular staff. These "students" are paid fixed salaries and when they get hold of a "live" one his name is given to a "regular" salesman by the sales manager. These "student" salesmen have proved invaluable. They follow up catalog inquiries and all sorts of leads that are analyzed as being in the "possible" and not the "positive" class.

USE THE IDEA EVEN IF IT ISN'T YOURS

Won't It Work in Your Business?—Ten to One It Will—Try It.

Closely related to the dealer who will not adopt and try out a good merchandising idea simply because the original example was carried out at some other point is the dealer who says, "That idea is bully—it's good; but it would never work with the class of people I sell. My class of trade is different."

In other words, here is our old friend who does not want to adopt a new idea because he did not think of it first; or because it entails some work, some thought or some expense. It is the attitude of mind that keeps men down—keeps them from growing big.

DON'T WASTE ADVERTISING

Make It Work for You—It is Seed of Sales.

Make the advertising matter the factory sends you **work.** That means, don't pile it on the table in the showroom and leave it there till it gets dust covered and fit for the waste-basket. Get it into the hands of prospects. Let it start working for you.

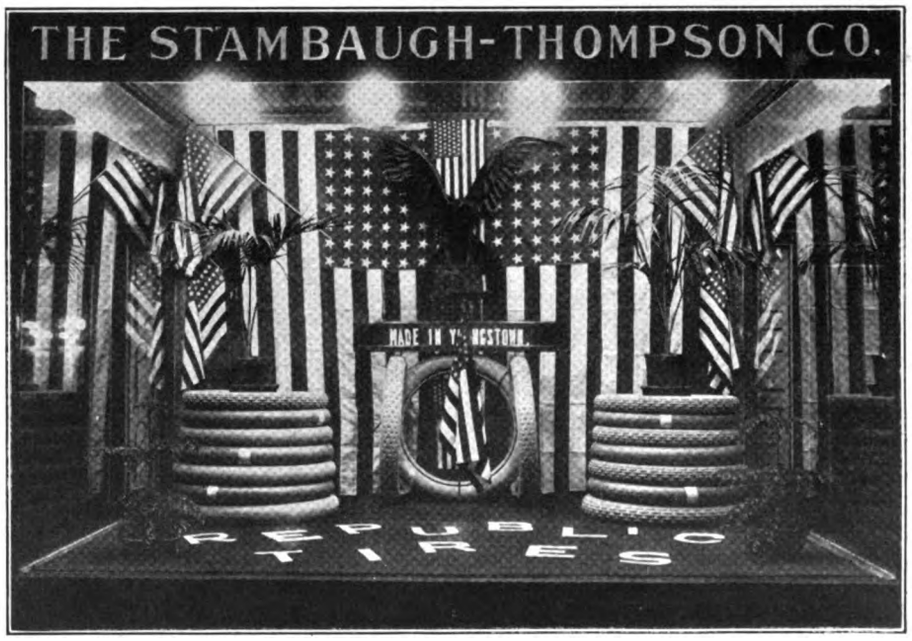
Advertising matter is like seed. It is sales seed. It should be sown at regular intervals in order that you may have a continuous crop of sales.

When those 1915 announcements come in the dealer usually shoots them out to the live prospects. But often there are quite a number over and above those required for the waiting prospects. What is to become of those?

Don't waste them. Don't let them grow cold. If your list is not large enough to use them all up make a new list that will include more names. Sow the seed. Get some new "sales-plants" started.

And when the additional matter comes along, follow up the first announcements. Don't think because you covered the mailing list once you have done all that is required. Why, if you make only two extra sales because of the work you're doing you will be amazingly well paid. So **get it in the mails!**

DUPLICATE THIS FOR THE FOURTH OF JULY!

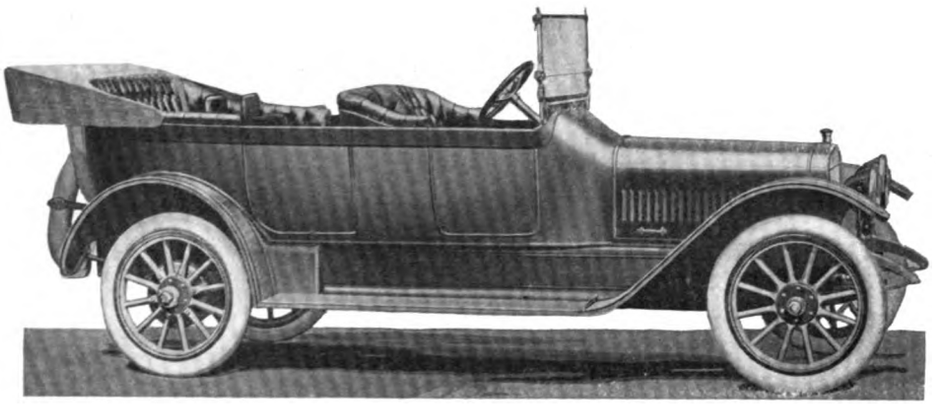


THE STAMBAUGH-THOMPSON CO., YOUNGSTOWN, O., WORKED A PRETTY PATRIOTIC EFFECT INTO A TIRE DISPLAY WINDOW—THE DECORATIONS ARE PREDOMINANT BUT THIS MAKES THE TIRES STAND OUT THE MORE

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More Room and Luxury in Latest Winton

Time-tried Features and General Appearance Unchanged—Bigger Radiator, Larger Body and Improved Springs.



BODY OF 1915 WINTON HAS RAISED PANEL AROUND UPPER EDGE

A single chassis, made in two wheelbase lengths, will carry all the 1915 Winton bodies. While there are no momentous changes, and, in fact, practically none in the mechanical aspect of the machine, the body lines have been thoroughly gone over and brought up to date and such betterments made as were suggested by experience and by the advance of the motor car builder's art.

The same streamline type of body is retained; but its outlines are emphasized by a narrow raised panel starting at the base of the windshield and running along the upper edge of the body all the way round, doors and all. The lines of the cowl, hood and body have been more smoothly blended and the general effect is exceedingly pleasing.

What is even more important, however, is that the new body is roomier than the old, especially in the front compartment. All doors have been widened and their hinges are of the concealed type. The instruments on the cowl-board have been arranged to present a symmetrical appearance, and a convenience has been added in the form of a tonneau light.

Other things that add to creature comfort, to say nothing of economy of upkeep, are springs with thinner leaves and more of them than were used last year, Dann oil cushion spring inserts to keep the leaves lubricated, rebound straps of a new type, and last, but not least, the use of 37 x 5 tires all round instead of the former 36 x 4½.

The appearance of the car as a whole is improved by the enlargement of the hood necessitated by the installation of a radiator 2 inches higher and 2⅛ inches wider than the former one, the object being to add somewhat to the efficiency of the cooling system. Further efficiency is obtained by shrouding the rear side of the radiator with a hood having a circular opening just large enough to swing the fan, which is driven by enclosed gearing. A Rayfield carburetter is now used to gasify the fuel.

There has been no appreciable change in the engine and its allied units. The horsepower is 48.6, according to the S. A. E. formula. Cylinders are 4½ x 5½, cast in pairs. The same peculiar intake manifold construction is employed, the carburetter on the left side and the two-branch manifold running over the tops of the cylinders to the valve side where these branches join a horizontal pipe with an opening into each cylinder block.

SPECIFICATIONS OF 1915 MODEL WINTON SIX.

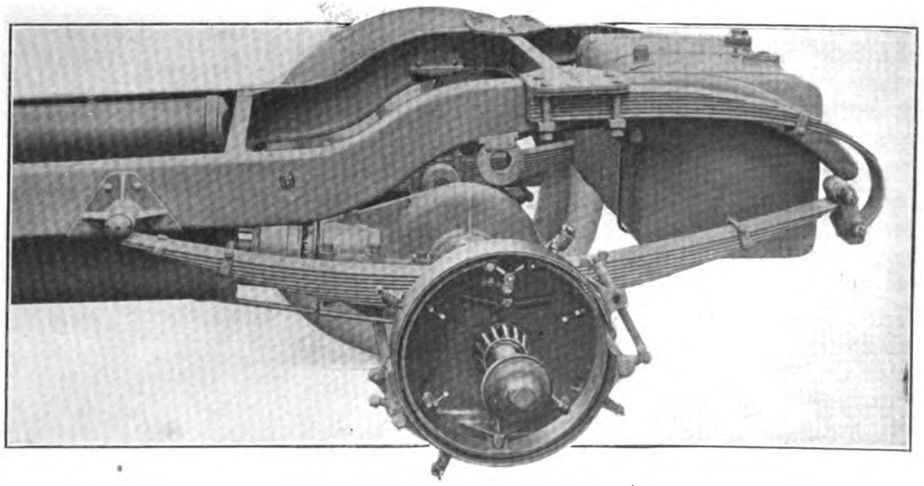
Model	21
Price—	
Touring, 5-passenger	$3,250
Touring, 6- and 7-pas.	$3,500
Roadster	$3,250
Coupe	$4,350
Limousine and landaulet	$4.600
Color	Optional
Make of motor	Winton
Number of cylinders	6
Shape	L-head
How cast	Pairs
Bore	4½
Stroke	5½
S. A. E. horsepower	48.6
Magneto	Bosch or Mea
Carburetter	Rayfield
Starter	Winton air or electric
Lighting	Gray & Davis
Clutch	Disk
Wheelbase	130 and 136
Tires	37 x 5
Wheels	Wood
Steering	Left
Control	Center
Rear axle	Floating

Options:

Body color; air or electric starter.

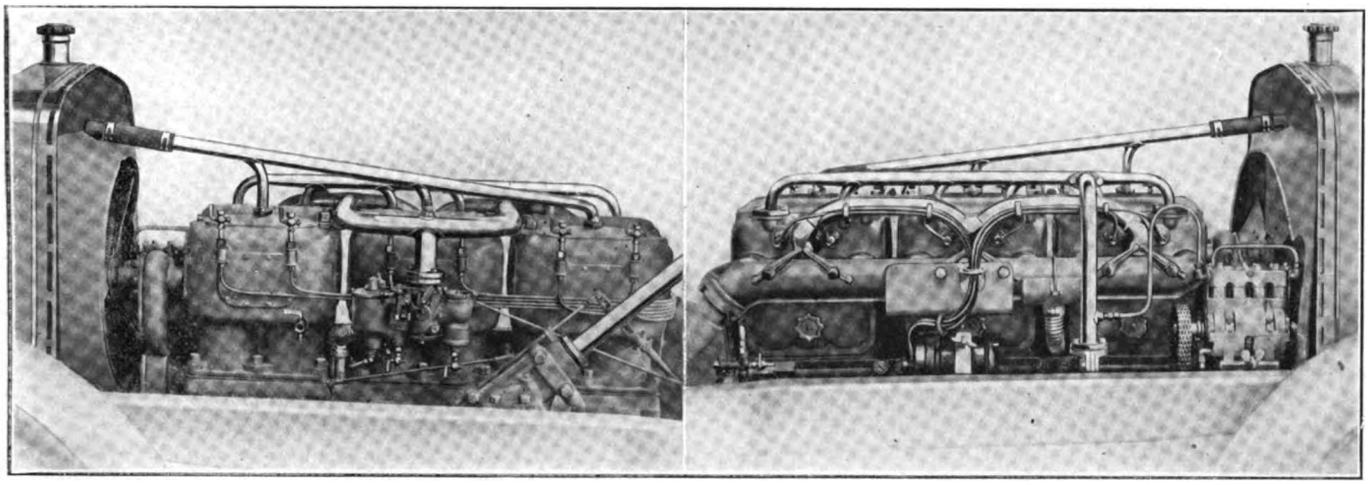
Equipment: One-man top with envelope and side curtains, rain-vision windshield, Waltham 8-day clock, tire carriers, pump, Klaxon horn and the usual tools.

The Winton still uses the vertically split aluminum crankcase. The main crankshaft bearings are in the right half, allowing the other side to be taken off without disturbing them. In the left



REAR END CONSTRUCTION—SPRINGS HAVE AN INCREASED NUMBER OF THINNER LEAVES WITH AUTOMATIC LUBRICATION

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LEFT—LEFT SIDE OF WINTON MOTOR SHOWING NEW SHROUD BACK OF ENLARGED RADIATOR AND PECULIAR INTAKE MANIFOLD ARRANGEMENT. RIGHT—RIGHT SIDE SHOWS AIR PUMP INSTALLATION

half there are three 5 x 8-inch hand holes which allow complete inspection without difficulty.

The pistons, rings, connecting rods, and wrist pins of any one set are all of the same weight and give good balance; the crankshaft, carried on four bearings, is of nickel steel; camshaft and cams are in one piece and may be removed through the front of the case without disturbing the rest of the valve mechanism. Valves are 2 inches in diameter and interchangeable. The timing gears are of drop forged steel, spirally cut, to ensure the quietest possible running.

The system of lubrication is unchanged. Circulation of the oil is by two pumps, operated by an eccentric on the rear end of the crankshaft. One pump takes oil from the reservoir and delivers it through tubes to the crankshaft bearings and timing gears, whence it runs into the crankcase. The other pump draws oil through strainers from the crankcase and returns it to the tank, where it is again strained before use. The cylinders, cams and camshaft bearings get their lubrication by splash. The flow of the lubricant is regulated in proportion to the motor speed by a bypass.

Ignition is by either a Mea or a Bosch dual magneto with a storage battery to supply starting current. The plugs are still placed horizontally in the cylinders over the intake valves. The magneto is strapped to an integral crankcase bracket and is driven off the end of the shaft, which takes care of the centrifugal water pump drive and the silent chain drive to the air pump. This driving assembly is shown in one of the illustrations. The air pump is a 4-cylinder water-cooled Kellogg.

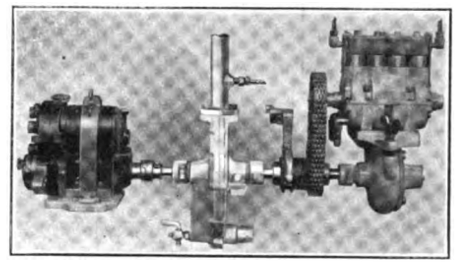
The Winton model 21 uses the same type of multiple-disk clutch as its predecessor, with 63 steel disks, 31 attached to the transmission shaft and 32 to spiders driven from the flywheel. The unit runs on F & S annular ball bearings, while four springs distribute the disk tension equally. The disks operate in oil. The clutch unit is housed in the forward end of the gearcase and is readily accessible through a hand hole with removable cover.

The gearset, which is not a unit with the engine, affords four forward speeds, direct on third. Control is selective. Interlocking arrangements make is possible to enter neutral when the clutch is engaged, but impossible to get any gear combinations without first declutching.

There is no change in the drive shaft back of the gearbox or in the rear axle. The shaft is fitted with a cross-type universal at the forward end and a roller type universal at the rear; the axle is floating. The differential unit is readily removable, as are the shafts and bearings. Gears are of nickel steel, and Timken bearings are used throughout the rear member. Conventional internal and external brakes operating on the usual form of drums are employed. A torsion rod parallels the drive shaft.

In the transmission of power there is interposed between the motor and clutch a universal joint similar to that at the rear of the drave shaft. This is enclosed in a grease-tight metal case, removal of half of which allows the dismounting of the gearbox so far as the front end is concerned. At the same time, it takes care of any possible disalignment between gearset and crankshaft.

The springs are three-quarter elliptic in the rear, and made long so as to give low suspension. More leaves have been added this year, and they are thinner, giving greater resiliency. The rear springs take the place of radius rods,



COMBINATION DRIVE FOR AIR PUMP MAGNETO AND WATER PUMP

having no front end shackles, and are suspended outside the frame. The diameter of the shackle bolts has been increased and a new form of rebound straps supplied. Dann lubrication inserts are used as standard equipment. The spring sizes are: Rear, 46½ x 2 inches; front, 52 x 2¼ inches.

Tires all around are 37 by 5, an increase over last season, when 36 x 4½ tires were used. The wheels are of wood.

The wheelbase is 130 inches on the roadster and four-passenger cars and 136 inches in other cars. Some body dimensions of the five-passenger sars are, extreme width, 70 inches; distance from dash to seat, 26 inches; height of driver's seat from floor, 16 inches; width of front doors, 22 inches; width of rear doors, 24 inches; distance front to rear seat, 33 inches.

The doors have all been widened and are carried on concealed hinges. Cars having auxiliary seats are provided with enclosed compartments where the seats may be stowed when not in use. Equipment is complete and includes one-man top, a new design of rain-vision glass front, Waltham eight-day clock, tire carriers of a new type at the rear, tire pump, Klaxon horn under the bonnet. Prices are unchanged. The roadster and four-passenger are $3,250; the six- and seven-passenger, $3,500.

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Dealer's Legal Status

Chauffeurs' Commissions Are Forbidden by Law in the State of New York—Court Held Owner Need Not Pay Bill If Commission Was Paid.

By Geo. F. Kaiser

The problem of the chauffeur eager for a percentage of the money paid to garage keepers and repairmen for storage and repairs is one of the most vexing problems ordinarily confronting dealers.

Although the fact is generally overlooked, it is, nevertheless, true that it is unlawful in New York state for a person to pay a bonus to an agent, employe or servant of another. This is provided for in the New York Penal Code, Section 384, R., which reads:

Statute Forbids Commission.

An agent, employe or servant, who, being authorized to procure materials, supplies or other articles, either by purchase or contract, for his principal, employer or master, or to employ servants or labor for his principal, employer or master, receives directly or indirectly for himself or for another a commission, discount or bonus from the person who makes such sale or contract or furnishes such materials, supplies or other articles or from a person who renders such services or labor; and any person who gives or offers such an agent, employe or servant such commission, discount or bonus, shall be guilty of a misdemeanor and shall be punished by a fine of not less than $10.00 nor more than $500.00, or by such fine and by imprisonment for not more than one year.

It has been held by the New York courts that this section is directly in point when a dealer pays a commission to a chauffeur on supplies charged to the master. (General Tire Repair Co. vs. Price, 115 N. Y. Sup. 171.) This action was originally brought in the New York Municipal Court and the tire company recovered judgment. The car owner appealed and the judgment was reversed.

It seems the tire company had sued the owner for supplies and labor in repairing his car. The contract had been made through the chauffeur. After the owner's car had been repaired and he had virtually ratified the chauffeur's acts, he took advantage of the above section of the Penal Code and refused to pay.

He introduced in evidence certain letters which he had received from the tire repair company and which he contended showed a violation of Section 384 R. of the Penal Code, which letters follow:

Letter from Tire Dealer to Owner.

"With reference to our conversation today concerning your account, would say that, regarding commissions paid your chauffeur, we have given him the benefit of a 5 per cent. discount, which was supposed to be for cash. We have also allowed him 5 per cent. on the repair work which was brought here, and we should be glad to do likewise by you. Your impression that we have allowed him a long discount is erroneous.

"The discount allowed us by the tire manufacturers does not permit our giving all the profits to chauffeurs. We are under quite an expense in maintaining our business, and we ask only what is fair; and surely our customers, must expect to pay us a profit on what is purchased from us.

"For cash, over the counter, we can, and are only to glad to, handle the business on a closer margin. Such transactions allow us to turn the money over again, which naturally affords us means to handle the business on a much closer margin. In your case, however, the goods were charged to you, and some of the charges have been standing since February. We have to pay our bills on the 10th of each month, regardless of whether our customers pay monthly, as we are supposed to do.

"Your account is way past due, and we cannot see why settlement should not be made at the regular price list, which has been charged you. Please send us your check by return mail."

Owner's Reply to Dealer.

"I beg to acknowledge the receipt of your letter of the 10th of June, in which you state that you paid my chauffeur commissions amounting to 5 per cent. discount on my bills and a further 5 per cent. on the repair work.

"Inasmuch as I find that I have paid you since the 21st of May, 1906, some $2,166.64, upon which, presumably, upon your own statement, you have paid my chauffeur commissions amounting to $216.66, which commissions were illegally paid to him, and should have been paid to me, and inasmuch as you claim, further, that there is now due you from me the sum of $235.28, which, less the commission of 10 per cent. previously paid to my chauffeur, would leave me owing you $211.76, if, indeed, I owe you anything, I feel no little exasperation that, despite the fact that I paid my chauffeur a good salary and treated him with every consideration, you should have paid him discounts on bills paid by me, and I have instructed my counsel to thoroughly investigate the subject and ascertain whether I have any redress in the premises, and whether such practices cannot be stopped."

The Tire Company's Reply.

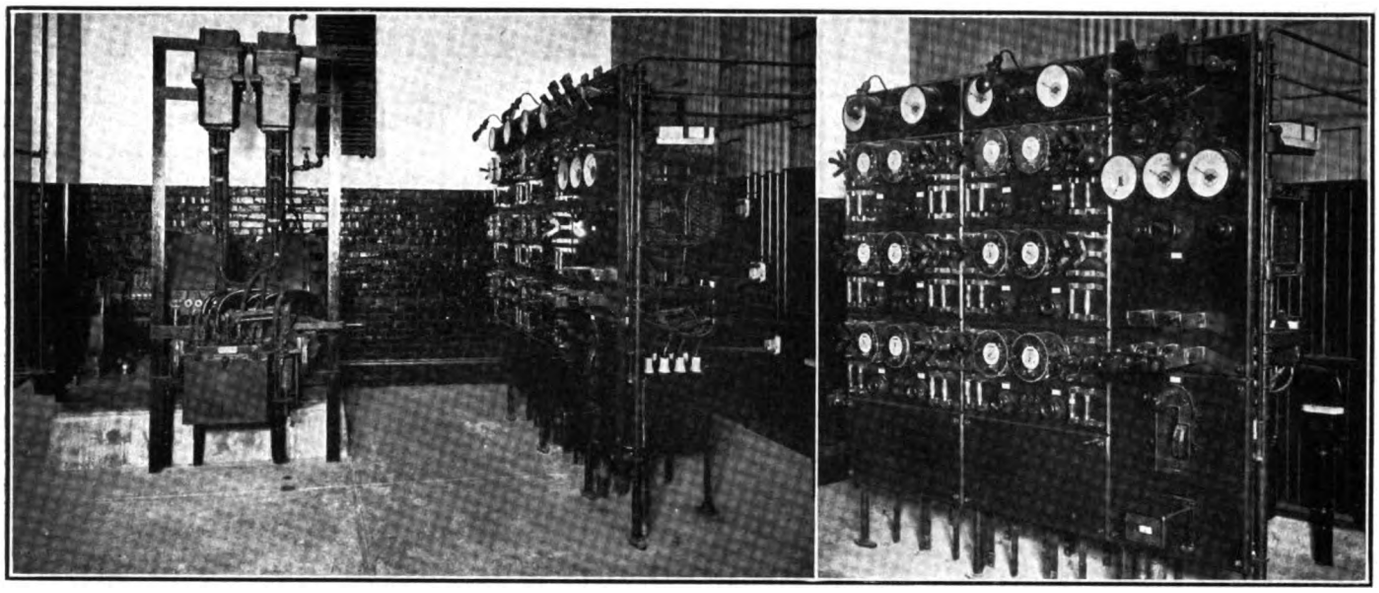
"We beg to acknowledge receipt of your letter of the 12th, and we regret to say that your impression that we have paid your chauffeur a commission which was illegal is a wrong one. We have not, as your letter states, paid your chauffeur a discount on bills paid by you. We have never charged you any other than the regular price on tires, and this you can verify by comparing our charges against the tire manufacturers' list. The manufacturers permit us to allow a 5 per cent. discount from this list for cash.

"You have never paid us cash, and consequently you have not received the benefit of the 5 per cent. Your account has been a monthly one, and settlement was supposed to have been made the 1st of each month. Inasmuch as your bills have not been paid within the 10-day time limit, we fail to see where you could justly expect a deduction of 5 per cent. from your invoices.

"In order to live up to the tire manufacturers' terms and secure the 5 per cent. discount, we have been obliged to pay them for goods sold you out of our pocket, and then wait patiently for you to settle. The 5 per cent. discount rightfully belongs to us, and, if we saw fit to pay that amount to your chauffeur, we are the sufferers, and not you, as your letter would indicate.

"We have tied up our money for several months and we fail to see that you are entitled to the 5 per cent. discount. We ask only what is justly due us, and, as some of your account dates back as

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WESTINGHOUSE CHARGING PLANT—LEFT, GENERAL VIEW, SHOWING CONVERTER SET—RIGHT, FRONT OF SWITCHBOARD

far as February, we would appreciate your check in settlement of the account."

The court in its opinion referred to the first case which came up under this statute, which was the case of Sirkin vs. Fourteenth Street Store, 124 A. D. 384, where a person sold goods to the department store through its purchasing agent and made an agreement with the purchasing agent, of which the department store had no knowledge, to pay him 5 per cent. of the purchase price of the goods ordered by him, which payment was held to be a misdemeanor and which contract was held to be void.

Suit had been started to recover $1,555.81, being the value of certain hosiery and wrappers which the agent had contracted to buy. The court said:

"The corrupt practice of secretly offering bribes to servants, agents and employes to induce them to place contracts for their masters or employers had spread to such an alarming extent in this state that its viciousness and dishonesty and demoralizing tendencies attracted the attention of the legislature at its session in 1905 and allowed it to declare it a public misdemeanor to give or receive such a bribe."

The court accordingly held that the department store should be allowed to keep the goods which it had received and need not pay for them because of the fact that the contract was void as against public policy.

Following the decision in that case, the court held that the car owner might retain all the benefits which had come to him by reason of the repairs to his car and that he need not pay for them, as the contract was void because of the agreement which gave a commission and there could be no recovery.

Charging Plant That Keeps Records

Measures Current Used for Each Charge and Total Consumption for Each Battery.

When the Curtis Publishing Co., Philadelphia, built an up-to-date garage for its electric commercial vehicles, a battery charging system was supplied by the Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa.

As the current supplied by the Philadelphia Electric Co. is alternating, it is converted by a motor-generator set—an electric motor, driven by the alternating current, direct-coupled to a generator which delivers direct current.

The motor-generator set, mounted on a concrete base, forms a separate unit and is located near the switchboard so that there is but a short distance to be covered by the wiring. The design of the generator is such that it may be adjusted to deliver current approximating closely the demands of the batteries on charge, so that there is little waste through resistances.

The direct current from the generating set is conducted to the back of the switchboard through which it is distributed, controlled and metered. Part of the switchboard is used for the controlling system for the generating set; this section is on the extreme right of the board and is equipped with a generator circuit-breaking switch, ammeter, voltmeter, field rheostat and, at the bottom, a reverse current relay which opens the circuits in case the voltage of the batteries under charge should rise above the voltage of the direct current generated by the dynamo.

The switchboard is built in two panels, exclusive of the converting set control panel, and each panel is sub-divided into three sections, each of which controls two charging circuits. Additional panels can be installed at any time. At the top of each panel are two meters, a voltmeter and an ammeter, which can be thrown into circuit with any charging line on that panel by switches.

Each individual charging circuit has its own integrating watt-hour meter, which is to electricity just what a gas meter is to a gas supply—it measures the current consumption directly. Each instrument has two scales, one of which is set at zero at the beginning of a charge and measures the amount of current taken by the battery for that particular charge while the other registers continuously, showing the total amount of current taken by a particular car.

As the cars always are charged on the same circuits, the information obtained in this way, when compared with the work done by the car, is of much value.

Each circuit also is provided with a rheostat and the necessary fuses.

The advantages of a charging outfit of this kind are that it is compact; that protection is afforded both power and battery circuits; that the meters give at all times accurate information on all circuits and permit close control; that all control is effected from the front of the board; and that additions are readily made to take care of more cars.

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Pick the Man—Then Train Him in Planning

Help Him Train Himself and Be Efficient—Must Study Continuously to Keep Up.

By Arthur E. Corbin

Choosing salesmen is not a haphazard procedure. It is a science—a procedure by a well-defined plan. In this story Assistant Sales Manager Arthur E. Corbin of the Packard Motor Car Co. gives to Motor World readers the benefit of the Packard company's years of experience.

The paper was read at the convention in Philadelphia of the National Association of Corporation Schools and much of it has been omitted because of lack of space. It tells how to train men—and how a man may train himself.

Corbin's narrative of how a truck salesman planned for two years and then landed a truck order in forty minutes is a vivid illustration of what the trained man can do. And, he adds, every man must help train himself.

This business does not vary in its fundamentals from any of the standard lines of specialty selling, except possibly in one important factor, and that is, its universal popularity. It is the one business, I believe, where those engaged in it never escape from it. Some time during the day, even on vacations, the subject of automobiles comes up in general, and usually pleasant, discussions. The automobile man soon learns to take a carefully conservative course in his statements.

When we first started in the automobile business, because the public was so anxious to get automobiles, almost any kind of car would sell, and the salesmen were to a large extent order takers. As the years passed, some dealers developed who were better than others and the best and most stable companies naturally went after these dealers so that you now find almost universally that the most successful manufacturing companies are represented by the best business men among the automobile dealers.

We do everything possible to make our men feel happy and contented, knowing that they can go faster and farther under such circumstances. The winning football team jumps over the fence; the beaten one has to be carried off the field and can't practice for days. That's the psychology of it, and that's the reason why the man who is pleased is more efficient.

These dealers in turn, who are the best business men in the line, have naturally been looking for the best salesmen, and in building up their own individual organizations, have attracted to themselves those men who are best qualified to serve their class of patrons.

There is nothing truer in this world that I know than the statement that "Them that has, gits." The more successful an individual or corporation is, as long as they keep within the realms of common sense, the more successful they will become.

One of Mr. Lewis' pet sayings is that you can't buy salesmen clever enough to overcome a sore customer, and one of the basic principles of our sales organization is to earn the good will and confidence of our patrons, because if you once earn a man's good-will and confidence it is not his to take away from you; he cannot voluntarily give it to John and take it away from Henry. If you have earned his respect, even though for any reason you choose to name he may leave you—he will always respect you and in nine cases out of ten we have found this patron will come back again after he has disproved what he thought was a pet theory.

Spirit of Contest Effective.

The men in any organization like the spirit of contest and it develops that they care more for the honor of being first and the recognition which goes with it than for the actual reward that the winning brings to them.

There may be some points about the development of our men which will be of especial interest to you. One of the ideas which we have thoroughly driven home, and you all of you have probably done the same in your business, is the big advantage which selling preparation gives the men. In choosing our sales men the matter is largely left to our dealers, who have their money invested, and our branches are treated on the same basis because they must stand or fall on the same discount as the dealers.

Our dealers try to pick men who are healthy, of pleasing appearance, whose diction and speech is clean and pleasant, and if possible men who are used to moving socially in the same strata as their prospective customers and therefore know the type they have to deal with. If the prospective salesman is of local family this of course is a big help to him, but it is not essential, because a man of character will make his way anywhere. There is one fact you must not forget, and that is that the office boy reflects the mental attitude of the boss, and it is exactly as true all through the entire organization. It is therefore because the executives of the home company are high-grade, broad-minded men, that the dealers reflect this attitude, and from the dealers to the salesmen get a strong mental influence.

There are two types of men available. One is the trained salesman in the automobile business or other lines; efficient men, already taught the basic principles of good business, and in many cases familiar with our business from a competitive standpoint. These men present a very involved problem. To absorb them without hurting their efficiency and without hurting any one else's efficiency is a very delicate matter.

Trained Students Must Be Un-taught.

They have to be un-taught on many things, and it sometimes happens that good men cannot change their ways. The second method of getting men is to get good raw material, and it is just as true of the automobile business as any other business that eventually the large majority of salesmen will be developed from raw material. The preparation of these

Our dealers try to pick men who are healthy, of pleasing appearance, whose diction and speech is clean and pleasant, and if possible men who are used to moving in the same strata as their prospective customers and therefore know the type they have to deal with.

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men is almost a trust. We try to get them just as young as we can, preferably within a few months of the time they have finished their education and while they are still in the mood of application and have the habit of concentration.

It is our effort to instill into these young fellows the enthusiasm which we all have in our proposition, to make them feel that they are in the right business, that they are connecting themselves with the right company, and that they have the right goods to sell; to develop in them what we choose to call Packard pride; the pride of calling. These men sometimes come direct to the factory, where they are given a training of nine months to two years, or even more than that.

Work Through Dealer's Business.

They sometimes go direct to the dealer's establishment, where they start in in subordinate positions—in the stock room, accounting department, or shop. As their knowledge increases they are moved until finally they become demonstrators or demonstrating salesmen, and it has been our good fortune to find that such men as are eminently satisfactory to us almost universally stay with the organization. In a few prominent instances that I have in mind where men have gone elsewhere because of offers which appealed to them at the time, these men have come back to the organization and are again in the ranks and a part of the family.

There is nothing truer in this world that I know than the statement that "Them that has, gits." The more successful an individual or corporation is, as long as they keep within the realms of common sense, the more successful they will become.

The salesman of high-grade automobiles has many and often delicate problems to meet, from the lady who wants a car painted to match her new evening dress to the man who wishes to replace his 100 horses with big motor truck units.

After a man becomes a salesman and goes out selling into the individual dealer's territory, he is kept there from three to six months, sometimes more, developing his individuality and learning his local environment. If, in the dealer's opinion, he makes good after this probationary period, he is then sent in to the Packard factory to attend the sales school, which is held periodically and lasts for two weeks.

I have had salesmen tell me that it was probably the hardest two weeks' work they ever put in in their lives. The mornings are taken up with talks by the executives and department heads, beginning with the president and going through all departments in which they would be interested, and in the afternoons they are given cards on which questions are printed about the product, and sent out into the factory for what is known as laboratory work, during which period they seek out for themselves the answers to the questions. These are written up that evening and reviewed the following morning.

The course closes with a written examination and these books are corrected and sent to the man's employer and finally are returned to the man for his own guidance. We, too, have learned like the National Cash Register Co. that telling is not teaching; teaching is the art of making a man learn.

We don't stop with these men after they return to the field. Our hope is that this start will simply make them self-teaching; in other words, that they will keep on learning about the product and our special merchandising methods. We feel that our business is really a profession; that like the successful doctor or lawyer it is necessary for every salesman to read and study continuously so as to keep abreast of the development of the business, and our development in the last ten years has been so rapid that it is not difficult to make the men see this.

We have in our organization a most lovable character who is reputed to be the deepest-thinking man in the automobile industry today, and his very example of constant study is enough to make the men want to increase their understanding and abilities. You can see that our whole campaign is one continuous campaign of preparation so that the man will be ready to meet any expected or unexpected situation.

The War Lord Was Prepared.

When I was a youngster the story of the Franco-Prussian war made a great impression upon me. You remember reading how it was the French who declared war, thinking to catch the Germans unprepared. Baron von Moltke, the War Lord, sat in his sanctum working on some papers when the aide rushed in and said, "Your Excellency, the French dogs have declared war." With apparently no exhibition of feeling, von Moltke told him "The plans are in the third pigeonhole on the left, in the second tier," and taking that set of papers the aide set in motion the carefully prepared outlines which put a very sizeable army onto French territory within a few hours.

We have learned that telling is not teaching; teaching is the art of making a man learn.

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All the lines of communication had been carefully gone over and chosen, the commissary department thoroughly looked after, the supplies ready; just what troops were to go were outlined, and preliminary notices had been sent them; their transportation wagons, artillery and horses were ready and waiting. In other words, they were prepared, and before the French got started the German campaign was well under way.

Sold Trucks in 40 Minutes.

I could not help but think of this in the case of a truck sale in New York. One of the largest wholesale grocers was on the prospect list in the spring of 1908 when the truck department has its first inception, and I was the only man in the whole department. For two and a half years we worked on this prospect, but, because the head of the company was away in Europe for a year after we had begun to make an impression on his subordinates, we were unable to bring the matter to a head.

One morning at 9 o'clock we received a telephone call, stating they had decided to investigate the subject of motor trucks and asking us as one of three companies to have our representative at their office at 10 o'clock. The Truck Department by that time had developed into a corps of eight men, and the salesman in whose individual territory this prospect was located was called in and told to go down there. He went to his desk, pulled out a roll of papers, put through two or three telephone calls, and left.

He was in the president's ante-room at the grocery company at seven minutes of 10—just a little ahead, and being the first arrival of the three, naturally got the first audience. When he was introduced to the president this gentleman said he would like to have his general manager, stable boss, and chief shipping

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clerk present at the interview. When the general manager walked in he started to introduce him to Albro, the salesman, and Albro promptly said, "I have met Mr. Blank," and Mr. Blank said, "Yes, Mr. Albro has given us several demonstrations."

Then the stable boss walked in. The president started to introduce him and he said, "Hello, Albro, that was a bum cigar you gave me yesterday." Albro said, "Well, you smoked it all, anyway." Then came the chief shipping clerk. Albro went to meet him, shook hands with him, and said, "How are you, Bob?"

Plans of Delivery All Ready.

The president asked what kind of a game he was up against. Albro said, "None, sir, but we have been working on your business for over two years, and it has been my pleasant duty to become acquainted with a great many of your men." The president said, "Well, let us get down to business. What kind of a truck do we need, and how many?" Albro said, "I would like to show you this plan," and immediately unrolled a scale drawing one inch to the foot, showing a Packard chassis with their type of body and colored in their colors, with their regular sign and type of lettering on the side.

The president said, "This is very good looking, and looks very much like our present wagons." The stable boss said, "It should be all right, as Mr. Albro and I have spent a good many hours on the details and planning out what I thought would fill our requirements." The president, with that picture of the truck right before him on the desk, asked what the Packard truck would do. Mr. Albro asked him what route he was considering. "If I remember correctly," he said, "No. 16," which was Harlem and the Bronx.

Had Mapped Out Every Detail.

Mr. Albro pulled out another large sheet, showing the entire layout of routes, the number of horses used on each, the tonnage hauled per day on each, the amount of time consumed for each load, and the expense. Over opposite this for each route the suggested number of trucks, together with the estimated expense of their operations. The president said, "Why, this is fine. Why have I never had such a plan of our delivery end of the business?" The shipping clerk said, "You will find it on your desk, sir, but you have been back only two or three days from Europe and probably have not got to it yet."

I might mention right here that the reason for their sudden decision to investigate motor trucks was a hot spell in New York which had killed off 10 of their horses. Albro knew that their necessities required a quick move. Then came up the subject of how many trucks they must need, and on the route under consideration it was shown that two trucks would do the work of the horses they had lost, but the salesman had so impressed on the stable boss the necessity of giving the truck a fair deal and of having the same factor of safety in the truck service as in the horse service, with one unit in reserve, it was finally settled they believed they needed three trucks. Then came up the question of delivery. Albro told them we had two truck chassis we could deliver right away and the third before the bodies could be built.

The men in any organization like the spirit of contest. They care more for the honor of being first and the recognition which goes with it than for the actual reward that the winning brings to them.

Even Body Man Was There.

This naturally brought up the subject of bodies. Albro explained we had found a reputable body builder with whom the stable boss and others could keep in daily touch regarding details and that it would be best for them to give the contract for bodies direct to this man. The president said, "Yes, but we must move quickly on this—how long will it take us to get those bodies from that man?"

Mr. Albro said, "Excuse me just a minute," went to the anteroom door, beckoned to some one there, whom he had telephoned to meet him there before leaving the New York establishment. This man understood the plans, having been over them before, and was ready to immediately submit his bid, and give time of delivery. To cut the story short, Albro returned in 45 minutes after his introduction to the president with the signed contract for three trucks, the body builder had the order for the three bodies, and the salesmen of the other two companies were still in the anteroom waiting for an interview.

You can't buy salesmen clever enough to overcome a sore customer. If you once earn a man's good-will and confidence it is not his to take away from you; he cannot voluntarily give it to John and take it away from Henry. If you have earned his respect, he will always respect you.

Simply a matter of hard common sense applied to the necessities of an individual case.

The automobile business is just as full of romance as your businesses, as I stated at the start, pleasure makes for efficiency. We do everything possible to make our men feel happy and contented, knowing that they can go faster and farther under such circumstances. Starting with good material and welding them into a winning team makes them go faster and progress further than the worried man, waging the uphill fight. The winning football team jumps over the fence; the beaten one has to be carried off the field and can't practice for days. That's the psychology of it, and that's the reason why the man who is pleased is more efficient.

High Motive Efficient Motive.

We have proved that the high motive is the efficient motive, and the position of the Packard Motor Car Co. today is one of the best examples of this in the whole industrial world. We try to teach our new men, and we all ourselves believe, that to make you work you must have creative responsibility and make the job bigger than it ever was before, that the work must have social approval, that the work must be a social service, that you must feel the cooperation of other men, have team play; that the heads are not over you or under you, but with you.

Use the Workable Idea.

"Show me a new idea that's workable and I'll use it no matter where you got it from," says the sales manager of one of the largest and most successful concerns in the world.

And the dealer who will succeed in a large way is the man who, like this sales manager, is willing to test and try out for himself every plan or idea that seems at all practicable. He does not want to stay in a rut. He does not want to admit to himself that he does business exactly the same as a thousand other dealers are doing it. He wants to have something different in his way of carrying on a business that makes his concern stand out from the rest.

The idea may have been originated in a distant part of the country, it may have come from a foreign field or it may be from a widely different trade but that is no reason it might not work.

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In Salesroom and Garage

Thomas Brooks, who already owns garages at 2674 and at 2711 Woodward avenue, Detroit, has bought the Highland Park Garage, formerly operated by W. S. McEvoy. The name will be changed to "Brooks-The Automobile Exchange." It is the intention of Brooks to secure more garages.

Louis C. Miller, formerly with Carl H. Page & Co., Chalmers distributer in New York, and the Chalmers Motor Co., Detroit, has entered business for himself; he has opened a shop at 291 12th street, Detroit, and will make a specialty of body work and remodeling cars.

The Greencastle Garage, Greencastle, Ind., which has been operated for several years by Cassidy & Browning, has been purchased by Guy Coons, formerly of Advance, Ind. He will operate it. Cassidy has retired because of poor health.

The Miller Automobile Co. has been incorporated in Jacksonville, Fla., and has bought the B. C. Miller repair-shop and salesrooms, located on Main street; the company will add to the equipment and the stock of accessories.

Dudley F. Benton has opened the Mohegan Garage in Lake Mohegan, N. Y. He formerly was connected with the Lawson Garage in Peekskill, N. Y. He handles the Ford.

The Excelsior Motor Supply Co., Harrisburg, Pa., has opened a branch store at 126 North Front street, Steelton, Pa. Its main store in Harrisburg is at 1007 North 3d street.

Thomas S. Kendall, Des Moines, Ia., has organized the Kendall Auto Taxi Service Co. with headquarters at 324 West 7th street; he will conduct a taxicab business.

Walter H. Coleman, Andover, Mass., plans to open a supply store on Main street; he also owns and will continue to operate an electric supply store on Park street.

Harry K. Stormont has entered the garage trade in Indianapolis at Central avenue and 30th street; he was telegraph editor of the Indianapolis Star for eight years.

W. L. Forney, Chambersburg, Pa., has converted his sales and exchange stables into a garage; he is owner of the Franklin Auto & Supply Co.

E. L. Wilkins and Jay Lescher, Mount Carmel, Ill., have purchased the Manley-Wilkins Garage on 4th street; they will operate it.

Cedar & Russell is the style of a new firm of repair-shop operators in Santa Cruz, Cal. They have located on Cathcart street.

The Broadway Garage, 815 Broadway, Bayonne, N. J., has been taken over by Ruh Bros. The garage has a repair-shop attached.

The J[illegible] M. Auto Supply Co. has opened a store in Pittsburgh, Pa., at 3555 Grand boulevard; Republic tires are stocked.

The Concord Street Garage has been opened in Corry, Pa., at 319 Concord street; the Chalmers and Saxon will be stocked.

William D. Howatt, Port Chester, N. Y., has opened a garage at 147 South Main street; he has styled it Central Garage.

George O. Athorne, formerly of Elliott, Me., has purchased the Granite State Garage in Dover, N. H. He will operate it.

Fred Waters and Fred Swatrs, Mayetta, Kan., are about to open a garage; they also will secure a car agency.

The Paige-Detroit Motor Co., Memphis, Tenn., has secured plans for a new garage; it will cost about $20,000.

Rodney Sharpe, Wilmington, Del., plans to erect a garage on Greenhall avenue; it will cost $12,000.

A. N. Barber, Riverside, Cal., has opened a garage at 446 8th street; he will handle the Maxwell.

F. F. Stowe, Redlands, Cal., has purchased the Orange Street Garage; he handles the Studebaker.

The Mutual Taxicab Co. has been formed in Pittsburgh, Pa. It will operate a taxicab service.

John W. Wertz & Son, Shillington, Pa., have opened a repair-shop; it is on Lancaster avenue.

Johnson Garage is the style of a new business in Bellaire, O. It is located on 33d street.

Motz & Ary, Atlanta, Ill., have opened salesrooms; they have the Hupmobile agency.

Joseph Menk has taken over the New Castle Garage, New Castle, Del.

W. S. and Fred Clarke, Russell, Ia., are about to open a garage.

MOTOR CAR DEALERS RECENTLY APPOINTED

Raton, New Mex.	Haynes	E. J. Love Motor Co.
Ravena, N. Y.	Maxwell	Joralemon Bros.
Ray, Ind.	Maxwell	McNaughton & Warner
Red Bluff, Cal.	Maxwell	A. A. Curtis
Regent, N. D.	Maxwell	Show & Boe
Reynolds, Neb.	Maxwell	R. A. Bothwell
Rhinelander, Wis.	Maxwell	T. C. Wood Hardware Co.
Ridgway, Mo.	King	Curtis & Francis
Roberta, Ga.	Maxwell	Seagler Bros.
Roseville, O.	McFarlan	Roseville Garage
Salt Lake City, Utah.	Haynes	A. F. Savage
Salinas, Cal.	Maxwell	C. S. Nuttall
Santa Barbara, Cal.	Maxwell	E. J. Boescke, Jr.
Saranac Lake, N. Y.	King	Shelley Tool Co.
Savannah, Ga.	Maxwell	N. H. Gilsdorf
Schenectady, N. Y.	King	Schenectady Weld. & Repair Co.
Scotland Neck, N. C.	Maxwell	S. B. Kitchen, Jr.
Scotland, S. D.	Maxwell	William Catton
Scranton, Pa.	King	Lackawanna Auto Co.
Scranton, Pa.	Maxwell	Lackawanna Auto Co.
Sedro Woolley, Wash.	Maxwell	State Street Garage
Seneca, S. C.	Maxwell	J. L. Lawery
Shellman, Ga.	Maxwell	S. Shelfield
Shenandoah, Pa.	King	R. H. Morgan
Shelter Island, N. Y.	King	Geo. B. Wells
Shickley, Neb.	Maxwell	Elmer Johnson
Shreveport, La.	Maxwell	Lawrence & Embry
Silex, Mo.	Maxwell	Silex Grain Co.
Smithfield, N. C.	King	Simon B. Jones
Soloam Springs, Ark.	Maxwell	Farmer & Perry
Sonora, Cal.	Maxwell	W. H. Sharp
Spalding, Neb.	Maxwell	F. J. O'Hara
Spartanburg, S. C.	Maxwell	W. J. Johnson
Spokane, Wash.	Haynes	Rose & Williams
Spokeville, Wis.	Maxwell	Gerdes & Voight
Springfield, O.	Herff-Brooks	Jordan Motor Sales Co.
Springfield, Mo.	King	H. E. Seeley
Springhill, La.	Maxwell	M. A. Stephens
Sprucer, Ind.	Maxwell	A. C. Williams
Stamford, Conn.	Maxwell	Ideal Garage
Stanberry, Mo.	King	Welch & Enyart
Starkweather, N. D.	Maxwell	Resler & Fawcett
Stanford, Ky.	Maxwell	H. C. Carpenter
Summitville, N. Y.	Maxwell	F. C. Schindler
St. Genevieve, Mo.	Maxwell	F. X. & A. J. Siebert
San Luis Obispo, Cal.	Maxwell	Union Hardware & Plub. Co.
Sylvia, Kan.	King	G. A. McPherson
Taft, Cal.	Maxwell	Krull & Jones
Taylorville, Ill.	Maxwell	Walter B. Wood
Troy, N. C.	Maxwell	G. W. Allen & Sons
Tonopah, Nev.	Maxwell	Kelly & Campbell
Topeka, Kan.	King	W. T. Dawson Auto Co.
Tulsa, Okla.	King	Williams & Staup
Upperco, Md.	Maxwell	J. F. Armacost
Utica, N. Y.	Herff-Brooks	Lawrence J. Zobel
Waco, Tex.	Haynes	W. M. Oden
Walton, N. Y.	Maxwell	Munn & Parker
Wapakoneta, O.	King	W. G. Taylor
Water Valley, Miss.	Maxwell	W. B. Williams
Waynesboro, Pa.	Maxwell	J. C. F. Groh
Wellsboro, Pa.	Maxwell	Evans & Snyder
Westfield, Ill.	Maxwell	Floyd Barbee
White Plains, N. Y.	King	Berbard Hopp, Jr.
Willsboro, N. Y.	King	L. G. Barton
Winfield, Kan.	King	A. E. Hudson
Woodland, Ga.	Maxwell	U. B. Jordan
Victoria, Tex.	Maxwell	F. L. Sterne
Vine Grove, Ky.	Maxwell	A. F. Vertrees & Son
Vernal, Utah.	Maxwell	Frank C. Griffin
Yale, Ill.	Maxwell	J. L. Forester
Yonkers, N. Y.	Haynes	Harold D. Van Derlyn
Youngstown, O.	Herff-Brooks	The Cartercar Sales Co.

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Advanced Maintenance

REPAIRING GASOLENE TANKS

By George Fernwell

Gasolene tanks, although not of such delicate construction as radiators, and therefore not requiring such a degree of skill and good judgment in dealing with their thorough repair, still offer some interesting problems in repairing and restoring them to their original shape after having borne the brunt of a collision. Fig. 1 shows a typical instance of a damaged gasolene tank.

Sometimes a smashed tank, like Fig. 1, is brought to some semblance of its former shape by the simple means of scraping the paint away from the entire

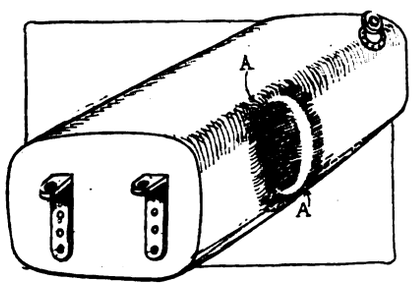


FIG. 1—TYPICAL INDENTATION IN GASOLENE TANK, SUCH AS WOULD BE MADE BY A WAGON TONGUE OR THE WHEEL OF A CARRIAGE BACKED INTO THE TANK

surface of the indentation, tinning the latter all over and then applying solder layer upon layer until the indentation is filled with a solid mass of solder.

With a milling file similar to Fig. 2 the solder then is carefully shaved and shaped to remove the rough surface left by the use of the soldering iron and as nearly as possible to trim the solder so that it touches a straight edge at all points when held lengthwise with the tank. The file shown in Fig. 2 is a very effective tool for quickly removing or smoothing large surfaces of solder. The teeth of the file do not become clogged with solder as in the case of the ordinary bastard file.

In filing away the superfluous solder care must be taken not to file through the sheet metal wall of the tank, also not to weaken the wall by filing partly through. Fig. 5 shows an effective method of raising an indentation, and may suggest to the workman how to make use of available means to suit the particular repair of this nature what may be on hand.

Previous Advanced Maintenance articles in Motor World have described in detail the repair of radiators. The series will make plain to any mechanic how to undertake these often difficult jobs.

The present article deals with gasolene tanks. Making a satisfactory repair of a tank is often difficult yet is simple if the repairman only knows how to go at it. Mr. Fernwell's directions in this story are a valuable lesson in this course of repair instruction.

Whether or not an indentation in a gasolene tank is too large to be filled with solder as described is a matter which must be left to the judgment of the workman or the owner, or to circumstances. One thing is certain, that this method of repairing the tank will not permit of the job being concealed even by entirely repainting the gasolene tank. Fig. 1 may make this clearer.

A large indentation such as illustrated in Fig. 1 cannot be made without causing the metal immediately surrounding the indentation to project beyond the true contour of the tank, as shown in A and A, Fig. 1; therefore, if such an indentation be filled up and leveled with solder the tank will still be more or less distorted.

Depending upon the severity of the damage, the indentation may or may not be raised approximately to its original position, at the same time causing protuberances or projecting surfaces of the tank shown at A and A, Fig. 1, to recede almost to their original position also.

If this is done, so that the tank has resumed approximately its proper contour, although the surface of the raised indentation may be somewhat uneven or wavy, a very fair job may then be done by cleaning the uneven surface and leveling up with the necessary thicknesses of solder and smoothing off with the milling file.

To raise the indentation perfectly the ideal thing would be to have one end of the gasolene tank taken out in order that suitable mallets and hammers might be used on the inside of the tank and the

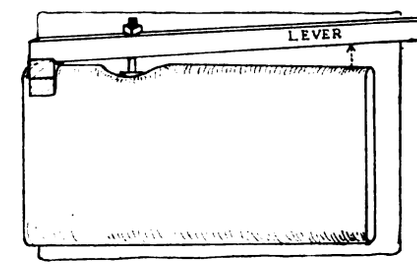


FIG. 3—METHOD OF USING A LEVER TO APPLY A STRONG PULL TO BOLT SOLDERED TO BOTTOM OF INDENTATION—FULCRUM IS ARRANGED TO DISTRIBUTE PRESSURE TO AVOID MAKING MORE INDENTATIONS

surface finally smoothed perfectly so as to need no leveling up with solder. By placing the tank on an iron mandrel of suitable cross-section every crease and wrinkle would be smoothed out. To take out the end of the gasolene tank is a problem involving some difficulty and also some danger. Methods for doing this will be taken up a little later; at the moment we are concerned with how to raise an indentation to its original level as nearly as possible and still leave the ends of the gasolene tank intact. One method is shown in Fig. 4.

Clean and tin a circular area about two inches in diameter in the center of the indentation; then procure a bolt with

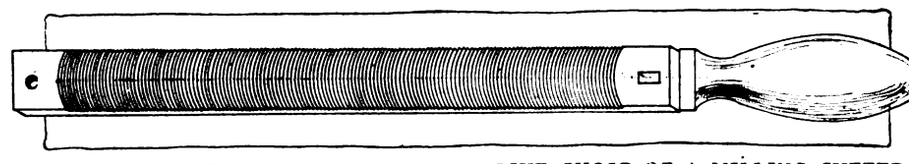


FIG. 2—MILLING FILE WHICH HAS TEETH LIKE THOSE OF A MILLING CUTTER AND CAN BE RE-GROUND WHEN DULL. EXCELLENT FOR HEAVY WORK AND FOR SOFT METAL

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a very large head, such as an ordinary fender bolt or step bolt. These latter have heads from three-quarters to one inch in diameter, with a stem from three-sixteenths to a quarter inch in thickness and two inches or more in length.

Thoroughly tin the head of such a bolt and as securely as possible sweat the head of the bolt to the tinned surface of the indentation in the tank. By means of the attached fender bolt, suspend the gasolene tank about two inches from the floor. A series of mallet blows or careful hammer blows patiently applied to the projecting portion of the gasolene tank immediately surrounding the indentation will by degrees, coupled with the dead weight of the tank, cause the indentation to slowly but surely become shallower.

If the metal of which the gasolene tank is made is comparatively light, quicker progress may be made by applying downward pressure to the tank against the resistance of the suspended bolt. The tank may even be lifted a few inches and pushed quickly towards the floor with considerable force. Also, depending upon the location of the indentation, a lever may be applied, as shown in Fig. 3.

It is quite possible that before very much progress can be made towards completely raising the indentation that

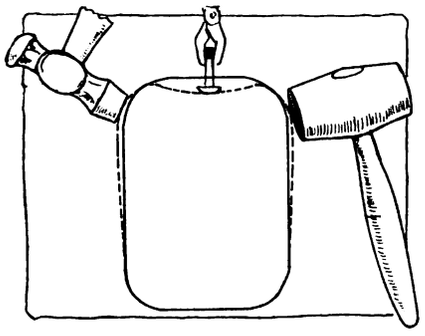


FIG. 4—RAISING A DEPRESSION BY PULLING ON A BOLT, THE HEAD OF WHICH IS SOLDERED TO THE MIDDLE OF THE DENT, WHILE BLOWS ARE STRUCK QUICKLY AND SHARPLY AROUND THE EDGE

the solder which holds the bolt to the gasolene tank may break its hold several times, necessitating resoldering the bolt in place. The indentation will be found to yield more and more readily to the pull of the soldered bolt and the blows of the hammer or mallet.

Should the work be proceeding in such manner that the exact spot at which the bolt may be soldered becomes raised higher than any portion of the adjacent surface, the bolt should be unsoldered and moved and resoldered at the lowest point in the surface of the indentation, and the same general methods applied as before.

The object of hammering the surface of the gasolene tank immediately adjacent to the indentation is to assist the action of the bolt of pulling the metal outwards, by driving the adjacent projecting portion inward. This does not mean that heavy blows are to be struck so that the effect of each blow is an additional bruise or indentation. On the

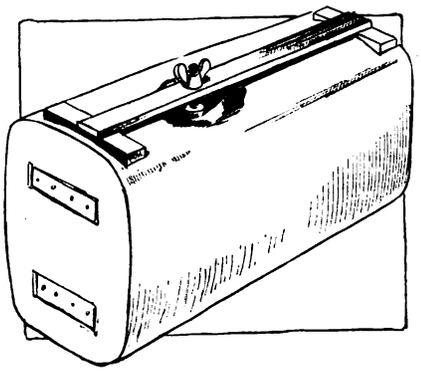


FIG. 5—TAKING A DENT OUT OF A TANK BY SOLDERING A BOLT-HEAD TO THE DEPRESSED PART, PASSING THE BOLT THROUGH A HOLE IN A STEEL BAR AND PULLING UP WITH A WING-NUT

contrary, it means that a series of quick, sharp, hard taps are required; each hammer blow close to the preceding one and following the rim of the indentation all around.

The effect of one series of blows will hardly be perceptible; it may take possibly fifteen minutes or longer of this patient hammering before the results begin to be noticed; from then on the effects of the hammer blows will be more and more noticeable.

Connecticut Men Go Exploring.

The long experimental search which has resulted in the Connecticut Automatic Igniter system having successfully ended, the sales force of the Connecticut Telephone & Electric Co. went on a different kind of search at its mid-summer meeting held in Meriden, Conn., last week.

After a motor car trip down the Connecticut valley and dinner in the old village of East Haddam, the party went in search of an old wine cellar of which it had heard and was as successful as the company had been in its search for the igniter; wine of the vintage of 1846 was found.

The factory is now working nights, due to the increase of business in the igniter system and the Ford Master Vibrator, and is the only industry in Meriden which is operating on this schedule. At the dinner President E. C. Wilcox and General Manager Lawton outlined further increases in manufacturing facilities.

Court Forbids City License Tag.

That the City of Chicago cannot compel drivers of pleasure cars to display tags under the city's license system, has been held by the Supreme Court of Illinois. The decision was rendered in an action brought by the city against C. R. Francis. It was held that the city ordinance conflicts with the state motor vehicle law, but that the city may legislate concerning traffic and rates of speed provided the conditions warrant such legislation and provided it is not inconsistent with the state law.

Hazeltine Grinder Patent Infringed.

The Hazeltine valve grinder patent No. 13,421, owned by the Specialty Machine Co., is valid and is infringed by the Ashcroft Mfg. Co., according to the opinion of the United States Circuit Court of Appeals in New York city. The patent is a reissue of No. 918,049 and the defendant had claimed that the lapse of time between the issue and the reissue barred the Specialty company from bringing suit. The lower court agreed with this and dismissed the bill of complaint, but the appellate court held that since reissue narrowed instead of broadened claims it was valid. It also found the Ashcroft device to infringe.

French Court Upholds Rudge-Whitworth.

The courts of France have upheld the Rudge-Whitworth triple-spoked wheel patent against Berliet, giving provisional damages of $2,000 against Berliet and provisional damages of $400 against Berliet and Tart. Against Faure, Promethee and Majola, the court awarded provisional damages of $400 to Rudge-Whitworth, under the triple-spoked, wheel locking patent and spanner patent. The final amount of damages to be paid will be determined by accountants appointed by the court. Some time ago the German court also upheld the triple-spoked pan wheel patent.

Saginaw to Begin Operations.

The Saginaw Motor Car Co., Saginaw, Mich., which was organized to build a $395 light car, plans to begin operations this month with an initial output of 10 cars. If the company's plans mature it will build 2,000 cars in 1915 and employ 300 men. A. R. Thomas, Detroit, and David Cuthbertson are behind the project. The company has secured the Brooks Motor Wagon plant, 200 x 400 feet.

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Chandler Increases Power and Lowers Price

Reciprocating Parts Lightened and Details Improved —$190 Cut Off, Price Now Is $1595.

Despite the fact that the 1915 Chandler six, manufactured by the Chandler Motor Car Co., Cleveland, O., is precisely like its 1914 predecessor except for detail betterments, the price has been lowered $190. The old price was $1,785, and the new price is $1,595.

Among the improvements the most important is the increase in the power of the motor. The makers state that the output is 10 per cent. greater than formerly, though there has been no increase of bore or stroke, which remain at 3⅜ x 5. The pistons have been considerably lightened and the flywheel has been reduced in weight. The carburetter is now a Rayfield. Two piston rings are used instead of three.

Other changes consist of substituting a pressed steel torque arm, paralleling the propeller shaft, for the comparatively heavy rod construction formerly employed; clearing the running-boards by hanging the storage battery inside the frame and placing the spare tire in a holder at the rear of the car; slightly widening and doming the mudguards, and improving the water system.

The Chandler belongs in the light six class, having an L-head motor forming a unit with the gearset; the bore and stroke of 3⅜ x 5 give a S. A. E. rating of 27.3 horsepower, and the cylinders are cast in threes. Coventry silent chains drive the camshaft, magneto, pump and lighting generator. The valves have 30-degree seats.

The crankshaft is carried on three bearings and has crankpins and main bearings 1⅞ inches in diameter.

Lubrication is effected by a combination of force feed and splash, the oil pump sending separate streams to the main bearings and the chains at the front. There is no exterior oil piping. Ignition is by Bosch high-tension magneto. A Mayo radiator cools the water, which is circulated by a centrifugal pump.

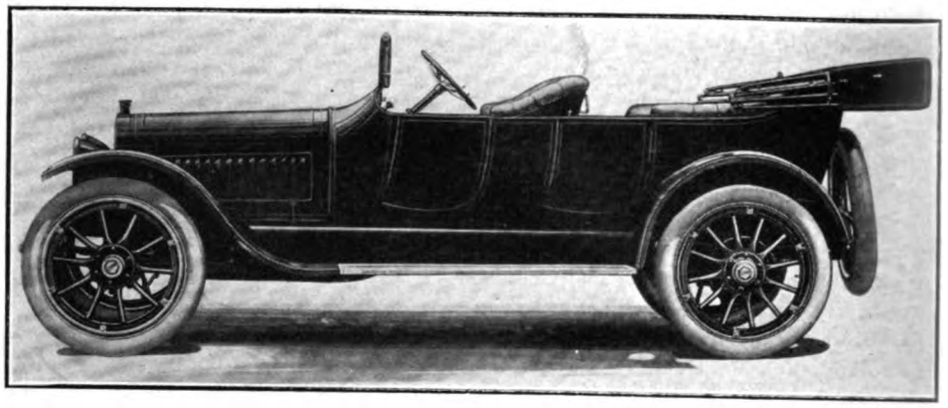
Both generator and starting motor of the Westinghouse system are mounted on the right side of the engine; the generator runs at crankshaft speed and the starting motor drives through the flywheel, the gear reduction being 15 to 1.

Power is transmitted through a multiple-disk clutch, having friction surfaces of steel on Raybestos, to the three-speed gearset, the shafts of which are mounted on F & S ball bearings. Gearshift and brake levers are mounted directly on the gearcase. The propeller shaft, which is not enclosed, is fitted with a double Hartford universal at each end and drives to a floating rear axle; throughout the rear axle assembly and in the wheels F & S ball bearings are used. Brakes are double internal with 14-inch drums.

Three-quarter elliptic springs are fitted in the rear and are mounted outside the frames. Wheels are of wood with 34 x 4 Firestone straight side or clincher demountable and detachable rims.

On the single chassis, roadster, touring, coupe, sedan and limousine bodies are mounted, the closed models, however, being built to order. The wheelbase is 120 inches and clearance 10½ inches.

The full equipment list includes top, Jiffy curtains, envelope, rain-vision ventilating windshield, electric motor horn, Jones speedometer, New Haven 8-day clock and a complete outfit of tools.

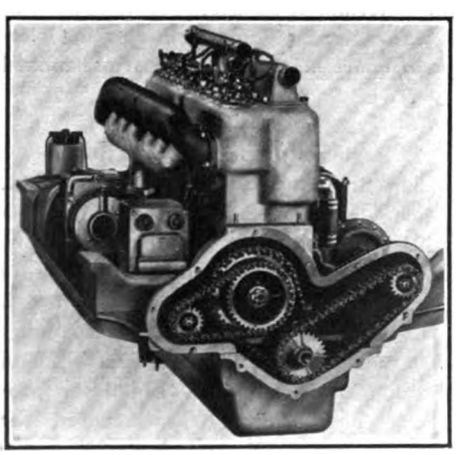


1915 CHANDLER LIGHT SIX WHICH HAS RUNNING BOARDS CLEARED

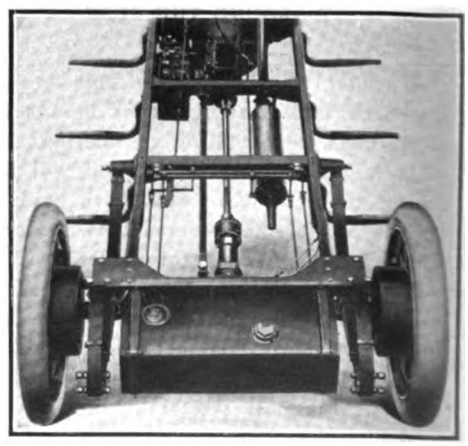
PRINCIPAL POINTS OF THE 1915 CHANDLER SIX.

Price, touring or roadster	$1,595
Color	Victoria blue
Motor	Chandler
Number of cylinders	Six
Shape	L-head
How cast	Threes
Bore	3⅜
Stroke	5
S. A. E. horsepower	27.3
Magneto	Bosch
Carburetter	Rayfield
Starter	Westinghouse
Lighting system	Westinghouse
Clutch	Multiple-disk
Gearset	3 speeds
Wheelbase	120
Tires	34 x 4
Wheels	Wood
Steering	Left
Control	Center
Rear axle	Floating

Equipment: Top, Jiffy curtains, envelope, rain-vision windshield, Jones speedometer, New Haven 8-day clock, electric motor horn, tools, pump, etc.



SILENT CHAINS INSTEAD OF GEARS



LIGHT SIX CHASSIS FROM REAR

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ALL READY AT SIOUX CITY TO START 300-MILE RACE

Entry List Is Imposing, Track Has Been Manicured and New Grand Stands Built—All Eyes on Weather Man.

The spot on the map of Iowa that indicates the geographical whereabouts of Sioux City is growing daily bigger and bigger in the eyes of motor-car racing enthusiasts—who, incidentally, are more numerous and more enthusiastic than ever since the Indianapolis sweepstakes. The 300-mile race that will be held at Sioux City July 4 promises to be everything that its promoters expect of it—and much is expected.

There are 26 entries, 27 being the limit, and the foreign cars included in the list form a contingent so strong that there is the keenest kind of interest to see whether they will do what was done at Indianapolis. While some of the drivers have not yet been named, there are no foreigners on the list, and there is much speculation as to whether the American drivers can get as much out of the extremely fast machines as the overseas pilots.

All eyes will be on the work of Billy Knipper in the Delage that brought home the biggest slice of bacon in the 500-mile race. Knipper has fitted his machine with Firestone tires. It is probable that Mulford and Burman will drive Peugeots of Indianapolis fame and Mel Stringer will drive a Peugeot special, 1912 model, owned by P. G. Stamm, New York. Harry Grant and George Babcock will pilot the two English Sunbeams.

Oldfield in all his glory will drive a Stutz, with Gil Anderson as his team mate. Spencer Wishart will drive for the honor of the Mercer name. The Sioux City race, in fact, will look very ruch like the 500-mile event, so far as the line-up of cars is concerned. The list of machines and drivers follows:

No.	Driver and Car.	Displ.
1.	Charles Keene, Beaver Bullet...	
2.	Arthur Klein, King.....	449.53
3.	Cyrus Patschke, Marmon	450
4.	W. J. Shrunk, White	447.1
5.	H. A. Wetmore, Chalmers....	414.7
6.	Roy Bauer, National	
7.	S. F. Brock, Ray	449.4
8.	Callahan, Stafford	290.9
9.	Mel Stringer, Peugeot Special.	447.22
10.	Jack Le Cain, Chevrolet	198
11.	....., Duesenberg	360.5
12.	E. Rickenbacher, Duesenberg..	360.5
13.	Geo. Babcock, Sunbeam	274
14.	Harry Grant, Sunbeam	274
15.	Gilbert Anderson, Stutz	427
16.	Barney Oldfield, Stutz	427
17.	Joe Horan, Metropole	447
18.	Ely Caillouette, Moon	347.8
19.	Spencer Wishart, Mercer	445
20.	....., Mason	360.5
21.	Billy Chandler, Braender Bulldog	
22.	Wm. Knipper, Delage	380.2
23.	Howard Wilcox, Gray Fox...	431.9
24.	Probably Mulford, Peugeot....	
25.	Probably Burman, Peugeot ...	
26.	....., Chevrolet	

The purse hung up contains $25,000. Several shorter events will precede the main event, and other prizes are provided for them. Timing will be done by the Pendleton system. The track is a two-mile circuit with dirt surface, well banked at the turns, and is being specially prepared for the big events. Hot oil has been used in preparing the surface.

New grandstands have been built, and accommodations prepared for a crowd of 50,000. Out in the field arrangements have been made for parking several thousand cars, which will reach the open space through a tunnel which has been run under the track. Extensive walls of reinforced concrete have been erected to protect the spectators.

JUDGES REVERSE DECISION ON MILWAUKEE CLUB RUN

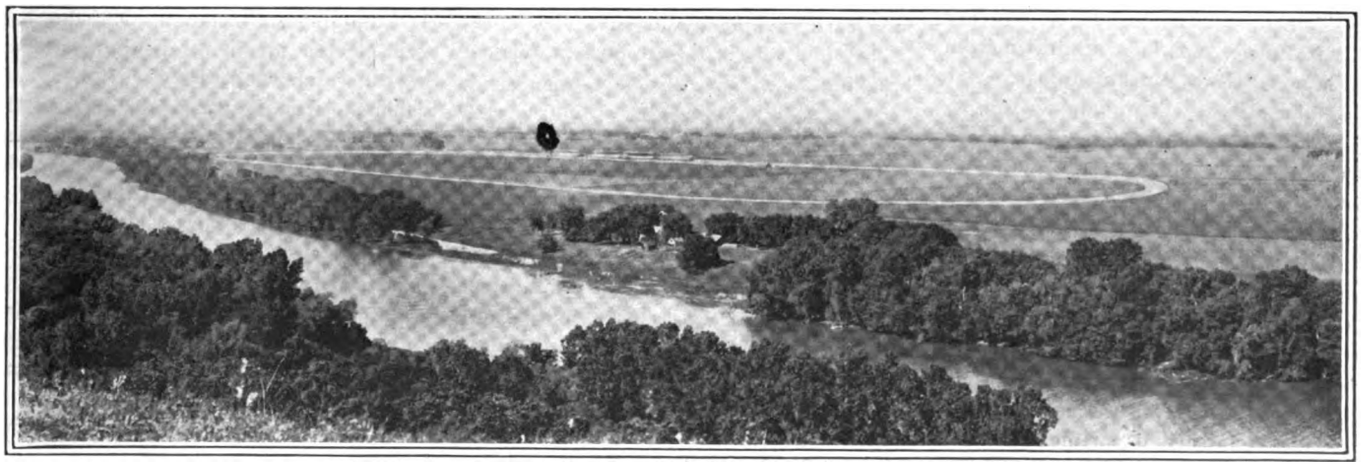
After all, it transpires that the ill-fated duck who gave his life that the Milwaukee Automobile Club might win the Wisconsin Motorist trophy in its reliability contest with the Milwaukee Athletic Club was sacrificed in vain, for the Athletic Club has been awarded the placque after the judges had heard all there was to tell.

Evidence was brought forward to show that an Automobile Club machine had collided with a hen and more or less injured it. This involved a penalty of 50 points, which offset the 50 points constituting the epitaph of the duck that figured in the original scoring and left the score 44 to 2 in favor of the Athletes. It appears that neither the driver nor the observer of the car which killed the chicken noticed the catastrophe, but it was caught by the eagle eye of the driver of a competing car that was following.

Neither club is quite satisfied with the result, and the losing organization has issued a challenge for another run to be held in August or September to settle the question of supremacy. It is anticipated that the day of the second contest will be one of peace and safety for the ducks and chickens.

Chicago to Entertain Orphans.

Orphan's Automobile Day will be held in Chicago July 29, when hundreds of children will be given a picnic at some amusement resort; a permanent organization to handle the affair soon will be formed. At present it is staged by the Chicago Automobile Trade Association, Electric Vehicle Association of Chicago, Chicago Garage Owner's Association and the Chicago Motor Club.



BIRD'S-EYE VIEW OF THE SIOUX CITY SPEEDWAY AND SURROUNDING COUNTRY

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PROMINENT MEN IN TRADE WHO ASSUME NEW DUTIES

(Continued from page 10.)

office of the Oakland Motor Car Co., has been appointed territorial sales manager for Grant Motor Co., Findlay, O.; his territory will be the state of Iowa.

Leigh Lynch has been made general manager of the American Top Co., Detroit and Tilbury, Mich.

Vincent Link, who resigned to take up other work, has rejoined the Universal Motor Truck Co., Detroit, Mich., in the capacity of chief engineer.

William Lehman, formerly production manager of the Commerce truck, has accepted the position of special representative for Grant Motor Co., Findlay, O., and is now on a trip through the West.

Ernst H. Brandt has resigned as manager of the Detroit-Cadillac Co., of New York, to become Eastern representative of the Hudson Motor Car Co., Detroit. He will have headquarters in New York city and have charge of the Hudson business in the Eastern states and Eastern Canada.

J. M. Shelor has been appointed district manager of Dodge Bros., Detroit, in Texas, with the exception of the Panhandle and El Paso County. Formerly he was Texas manager of the United States Motor Co. and latterly has been in the Shelor-Morris Automobile Co., Velie distributer in Texas.

W. A. Zimmerman, formerly secretary and general manager of the Mercury Mfg. Co., has been made director of sales and publicity for the Buffalo Electric Vehicle Co., Buffalo, N. Y.; F. C. Brown, previously district manager for the Chase Motor Truck Co., has been appointed sales manager of the truck department.

Thomas W. Warner, president and general manager of the Warner Mfg. Co., Toledo, O., and the T. W. Warner Co., of Muncie, Ind., has withdrawn from the Muncie Gear Works, Muncie. He allied himself with this company following bankruptcy proceedings and is believed to have withdrawn now that outstanding obligations have been met and the company is on a firmer footing.

Louis E. Wagner, a veteran in the electric vehicle trade, has become associated with the Century Electric Co., Detroit. He will direct his efforts to building up the efficiency of the sales and service branches in the national field and will organize a department for assisting dealers.

LINCOLN HIGHWAY SAXON TWO-THIRDS OF THE WAY

Little Car Expects to Reach San Francisco July 4, as Planned—Finds Bad Roads But Keeps Going.

The Lincoln Highway Saxon has now completed two-thirds of its trip. A total of 2,479 miles have been run since leaving Brighton Beach, New York, 22 days ago. Unless something serious happens, M. A. Croker and Fred Wilkins, who are driving the car, expect to be in San Francisco July 4, as originally scheduled. The car checked in at Salt Lake City, Utah, on Friday, June 26.

The tour over the Lincoln Highway has been no pleasure trip, as the average automobilist might think. There have been days when Croker and Wilkins would have been rather hard at work at the factory or at any other work.

The worst going was experienced in Iowa and Wyoming, while in Colorado it was only a little better. "There was a very bad stretch encountered near Gibbons, Ia., the heavy rain having transformed the road into a river," says Wilkins. "We did not want to ford it, but there was no other way of getting around and the car was driven through the water, which was so deep that part of the radiator was even in it.

"We came upon very good roads in Nebraska, although there were also parts of the route which had nothing charming in the way of roadways, this applying to the western part of the state.

"In Wyoming we met with the poorest kind of roads found thus far, and we hope not to see any more like them. They were not even cow paths or trails.

"Thus far we averaged 112 miles per day—2,479 miles in 22 days is our record thus far. By taking chances we could have easily averaged about 10 miles more a day, but this is no attempt at record breaking."

Garages to Raise Storage Rates.

The West Side garages in the city of New York have undertaken to make storage a paying part of the business and to reduce the heretofore unduly large profit on gasolene. A committee of the West Side garagemen met Monday afternoon, June 29, in the Apthorp Garage, 214 West 80th street, and each man agreed to canvass a certain section of the city on the West Side between 8th and 116th streets, and endeavor to induce all garages to raise storage $5 a month and charge a five per cent profit on gasolene.

The new rates, if adopted, will be $35 for open cars and $40 for closed cars in the older style of garages and $40 and $45, respectively, in new and first-class buildings. The West Side garages have reduced their prices on "gas" two cents, following the recent reductions by the oil company, making the retail price now 22 and 23 cents, according to location.

The committee having the storage matter in charge consists of Morris Segall, Apthorp Garage; William Herrodon, Royal Garage; H. M. Gibson, Lincoln Square Garage; A. Debblee, Longacre Garage, and James S. Griffin, International Garage.

To Manufacture Malcolm Cyclecar.

The Malcolm Cyclecar Co. has been formed to manufacture the Malcolm cyclecar at Plymouth, Mich., 18 miles from Detroit. The new company will occupy its own brick and concrete factory and has completed arrangements to produce cars in large numbers.

E. M. Jones will be retained as general manager, and C. H. Lawrence as sales manager. E. M. Jones, C. H. Lawrence, C. H. Bennett, B. B. Bennett and C. Fisher are several of the stockholders and directors of the company.

Kalamazoo 3,000-Pound Truck Coming.

The Kalamazoo Motor Vehicle Co., which was organized in Kalamazoo, Mich., last September, is building a 30-horsepower 3,000-pound truck, of which 25 are to be built this year. At present about 15 men are employed, but the force will be increased to 50 men before the first of the year.

Savage to Build a Light Car.

For the purpose of producing a light four-cylinder 20 horsepower car, the Savage Motor Car Co. has been incorporated in Detroit, Mich., by Delbert H. Cummings, Cincinnati, O., who has been elected president of the concern; the other incorporators are Robert W. Fishbock, who is treasurer, and A. H. Fuss. The capital stock is $10,000. Although no site for the plant has yet been chosen it is likely that the company will locate in Detroit.

American Metal Products Opens Up.

The American Metal Products Co., organized recently in Milwaukee to engage in the manufacture of bronze die castings, has started operations in part of the brass foundry of the defunct Wambold Mfg. Co.

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New York Dealers and Garagemen in Arms Over City's Car Seizure

Decry Action of Authorities Who Enforce 17-Year-Old Law.

For 17 years there has been on the statute books of the city of New York a law which forbids a car being left at the curb unattended, but the motor car dealers and garagement of the city were unaware of it until last Saturday. On that date officers of the Street Cleaning Department began a wholesale seizure of cars left standing at the curbs in the motor car section and conducted proceedings in a high-handed manner which has aroused much opposition and no little ill-feeling.

The authorities state that it is their desire to discourage the practice on the part of some garagemen of using the streets for repair-shops and wash stands. They state that some garages take in so many cars that they have no room fo. them in the building, whereupon they store them on the street and even repair and wash cars at the curb.

Were their activities confined to the cases of which they speak the opposition aroused undoubtedly would not have been so strong, but the officers have seized any and every car found standing at the curb, regardless of how long it had been standing, or for what purpose it had been left, impounded it and required the owner to pay a fine before the car would be released.

A taxicab driver with a Ford stopped in front of the Cutting-Larsen Co.'s establishment and went to the basement for parts. He was not gone more than five minutes, but in this interval officers hitched a chain and a pair of horses to his cab and dragged it away.

A Cadillac owned by a private owner was standing behind the Ford, the owner having just ordered it out of the repair-shop, and was paying his bill. This, too, was taken away and he was obliged to travel across the city and pay a fine of $10 before he could get his car.

A truck was standing in front of the White service station and had not been there more than five minutes when officers came along and said they were going to hitch chains on it and take it to the pound. Rather than have the vehicle thus treated, they were informed that a chauffeur would drive it to the pound, which he did, but this did not obviate the payment of a fine.

Taxicabs standing at officially designated cabstands were seized if chauffeurs were not with the cabs, even though they were but a short distance away, and these cars were impounded with the others.

While the seizures, as stated, were said to have been directed at garage abuses, probably a majority of the cars seized were such as those enumerated. Private owners are inquiring how it is to be possible for them to operate their cars in the downtown section and drop into business places for short calls unless they go to the expense of employing a chauffeur, which many of them feel they are unable to do.

The Automobile Dealers' Association of New York City, has begun an investigation of the matter and proposes to take action in defense of the rights of dealers. garagemen and private owners if the seizures are continued. No notice of the impending action was given and probably none of those affected knew that such a law existed, or that there was any adequate reason for its rigid enforcement.

The dealers and garagemen hold to the opinion that they have a right to the street in front of their places of business and that even if this right should be at all curtailed the curtailment should have been in a less summary manner.

Takes Over Bigsby Spark Plug.

The National Acme Mfg. Co., Montreal, will take over the manufacture of the Bigsby spark plug in Canada. The Bigsby plug is made by the Bigsby Mfg. Co., Cleveland, O. P. F. Mellinger is the manager of the new Canadian plant.

RUMOR SAYS SEARS-ROEBUCK HAS TAKEN COLUMBIA PLANT

Although Sears, Roebuck & Co. is said in certain circles in Hartford, Conn., to have purchased the plant of the Columbia Motor Car Co. in that city, the Maxwell Motor Co., the present owner, denies that the sale has been consummated. It will neither affrm nor deny that Sears, Roebuck is or has been negotiating for the property, although it states that negotiations for the sale are under way. The plant contains 227,000 feet of floor space and much machinery, with 10 acres of ground. The real estate is assessed for $250,000 and the machinery for $100,000.

O'Connor Leaves Pullman Helm.

Thomas C. O'Connor resigned as president of the Pullman Motor Car Co., at a recent meeting of the company held in York, Pa. H. W. Hayden, Detroit, recently connected with the Overland company, has been made president of the company and assumed his new duties as manager of the plant this week. Oscar Stevenson remains secretary and treasurer of the company, and in other respects the management will be the same. Both O'Connor and Stevenson will retain their positions as directors. The Pullman company is under contract to start July 1 building 5,000 cyclecars for the Lavigne company, Detroit. The Lavigne cars must be completed within a period of eight months.

New Master Carburetor Organizes.

The Master Carburetor Corporation has been organized in Detroit with a capital stock of $250,000, under laws of Delaware, with offices at 944 Woodward avenue. W. E. Burk, president of the Master Carburetor Co., Los Angeles, will reside in Detroit as vice-president and general manager of the new corporation, while W. W. Jenkins, formerly general manager of the Pacific Coast company, will act as general sales manager of the Detroit corporation, which is entirely independent of the Los Angeles company, and has manufacturing facilities for 250 carburetters per day.

Peerless Brings Out Tractor.

The Peerless Motor Car Co., Cleveland, O., has brought out a line of four-wheel tractors to be used in hauling trailers. One type hauls the trailers behind as with the standard truck and a small body is supplied to weight down the tractor either with live load or dead weight to secure the necessary traction. Another type carries one end of the trailer upon the tractor chassis.

Kelly Tire Pays Dividend.

The Kelly-Springfield Tire Co. has declared the regular quarterly dividend of 1½ per cent. on the first preferred stock and an initial quarterly dividend of 1¾ per cent. on the second preferred stock. Both dividends are payable July 1. to stock of record June 24.

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The Week's Incorporations

Detroit, Mich.—Western Gear Mfg. Co.; capital $5,000. Corporators—John Swanson, Victor Palm and Oscar A. Palm.

Detroit, Mich.—Simplex Engine Co.; capita. $40,000. Corporators—Harry Fraser, William G. Taylor and Frank Smallridge.

Pontiac, Mich.—Pontiac Drop Forge Co.; capital $60,000; to manufacture forgings. Corporators—Don C. McCord, Detroit, and others.

Detroit, Mich.—Princess Motor Car Co.; capital $100,000; to manufacture motor cars. Corporators—Ola C. and Isaac N. White and Carl F. Klein.

Wilmington, Del.—Cycle-Car Co.; capital $100,000; to manufacture cyclecars. Corporators—E. Price, G. W. Dillman and M. M. Dugan, all c. Wilmington.

Indianapolis, Ind.—Gates Mfg. Co.; capital $20,000; to manufacture motor car tops and seat covers. Corporators—F. E. Gates, F. O. Lane and R. A. Gates.

New York, N. Y.—New York Steam Auto Tire Works; capital $10,000. Corporators—John J. Foley, Minnie Beck and J. A. Callahan, all of 32 Nassau street.

New York, N. Y.—Grand Concourse Garage Co.; Capital $5,000. Corporators—John M. Ireland, Mary A. Ireland and Caroline Haffen, all of 2505 Creston avenue.

Waterville, N. Y.—Hale Auto Corporation; capital $500. Corporators—J. Charles Hale and Augusta M. Hale, both of 17 Scott street, Utica; Charles R. Hale, Waterville.

New York, N. Y.—Hollywood Garage Corporation; capital $30,000; garage. Corporators—John J. Pheelan, Gerald A. Grant and Max Frieder, all of 261 Broadway.

Mt. Clemens, Mich.—Pallau Steel Co.; capital $75,000; to manufacture motor car and vehicle springs. Corporators—A. T. Donaldson, A. J. Pallau and Clifton D. Jackson.

Buffalo, N. Y.—Hudson-Oliver Motor Co. capital $15,000; to deal in motor cars. Corporators—E. G. Oliver, George B. Wesley and Charles W. Pooley, all of Buffalo.

Cleveland, O.—Atlas Tire & Rubber Co.; capital $5,000; to deal in tires and accessories. Corporators—J. H. Bernstein, E. E. Gross, E. J. Bokor, F. Allen and J. M. Ulmer.

Columbus, O.—Tesseyman Auto Co.; capital $20,000; to deal in motor cars. Corporators—J. E. Tesseyman, I. A. Tesseyman, F. N. Boyd, J. F. Galloway and Matilda Heinrich.

Evansville, Ind.—Rimolex Tire Carrier Co., capital $20,000; to manufacture motor car accessories. Corporators—Moses A. Strouse, Alex Harnishfeger and Wilbur N. Erskine.

New York, N. Y.—Wall Street Taxi Cab Co.; capital $1,000; to operate taxicabs. Corporators—Bessie O'Hare, John J. O'Hare and Daniel O'Donnell, all of 585 Amsterdam avenue.

Hamilton, O.—Miami Motor Car Co.; capital $10,000; to deal in motor cars. Corporators—S. M. Goodman, Adrian Wuille, Howard Sloneaker, T. S. Goodman and J. W. Sloneaker.

New York, N. Y.—Public Service Auto Co.; capital $1,000. Corporators—Frank J. Bryant, 536 W. 145th street; Henry Wilber, 605 W. 144th street; Henry F. Garden, 550 W. 146th street.

Milwaukee, Wis.—Thomas Harvey Oil Co.; capital $50,000; to engage in manufacture, refining and sale of petroleum products. Corporators—Thomas O. Harvey, H. H. Daniels and others.

Hempstead, N. Y.—Comfort Shock Absorber; capital $500; to manufacture shock absorbers for motor cars. Corporators—George G. Bouthinon, Ida Bowdren and George P. Bowdren, all of Hempstead.

Detroit, Mich.—Cadillac Automobile Painting & Trimming Co.; capital $50,000; to paint and trim motor cars and build special bodies. Corporators—R. A. O'Neill, Herbert J. O'Connor and others.

Syracuse, N. Y.—Syracuse Automobile Laundry; capital $2,000. Corporators—Earle R. Madden, 1114 Onondaga street; Melvine J. Knowlton, 210 W. Castle street; Mabel L. Derby, 5½ The Crouse.

Middlesex Borough, N. J.—Manufacturers, Auto Sales & Repairing Co.; capital $50,000; general motor car business. Corporators—W. S. Van Doren, M. Cook and A. W. Miller, all of Bound Brook.

New York, N. Y.—Independent Auto Renting & Garage Co.; capital $500. Corporators—Thomas Callahan, 127 West 49th street; Charles M. Siegel, 256 East 74th street; Charles Pechner, 299 Broadway.

Marysville, Kans.—S. & S. Automatic Tireaze Co.; capital $100,000; to manufacture automatic jacks for motor cars. Corporators—H. E. Shumway, W. T. Scholz, E. R. Fulton, A. A. Nork and W. W. Potter.

New York, N. Y.—Western Tire Co. of America; capital $5,000; general tire busines.. Corporators—L. Walter Lissberger and Joel Jackson, both of Wellington Hotel; Frank H. Cross, 1650 Broadway.

East Orange, N. J.—Reiss Starter Co.; capital $200,000; to manufacture mechanical starters for motor cars, etc. Corporators—C. E. Reiss, East Orange; A. H. McCausland and W. B. Riley, both of Atlantic City.

Oswego, N. Y.—Ontario Motor Car Co.; capital $5,000; to deal in motor cars. Corporators—Arthur P. Wolever and Frank C. Wolever, both of 317 S. 4th street, Fulton; Charles A. Peterson, 166 W. 3rd street.

New York, N. Y.—James C. Stoops, Inc.; capital $15,000; general motor car business. Corporators—James C. Stoops, 435 West 35th street; Joseph M. Palmer, 13 St. Francis place, Brooklyn; Louis C. Goetting, 701 W. 177th street.

New York, N. Y.—Puncture Seal Co.; capital $5,000; to manufacture compounds for mending inner tubes, tire accessories, etc. Corporators—Henry D. Bahn, 314 East 137th street; Frank S. Murray, 400 West 57th street; Frank Eber, 1313 Clinton avenue.

New York, N. Y.—Motor Credit Co.; capital $1,000; to deal in motor cars and advance money to purchase same. Corporators—Arthur Enock, 63 Hamilton terrace; Adolph Morris, West 103rd street and Riverside drive; David Grinberg, Central Park West and West 91st street.

Changes in Capitalization.

Jackson, Mich.—E. C. Clark Motor Co., from $15,000 to $265,000.

Jackson, Mich.—Lewis Spring & Axle Co., from $350,000 to $750,000.

Recent Losses by Fire.

Racine, Wis.—Racine Rubber Co., formerly the Kelly-Racine Rubber Co.; plant damaged. Loss, $1,000.

Coming Events

* Indicates sanction by A. A. A.

July 3-4, Tacoma, Wash.—Tacoma Carnival Association's Montamara Festo road races.

July 3-4, Taylor, Tex.—Taylor Automobile Club's track racemeet.

July 4, Prescott, Ariz.—Prescott Automobile Club's road race.

July 4, Sioux City, Ia.—Sioux City A & C Speedway Association's 300-mile race.*

July 4, Providence, R. I.—Track racemeet under the auspices of F. E. Perkins.

July 4, Lyons, France—Automobile Club of France's Grand Prix 4½-liter race.

July 4, Cedar Rapids, Ia.—Track racemeet under the auspices of the Cedar Valley District Fair.

July 6, Flint, Mich.—Salesmen's Convention of the Flint Motor Wagon Department of Durant-Dort Carriage Co.

July 10, Rockdale, Tex.—Rockdale Automobile Club's track racemeet.

July 13-14, Seattle, Wash.—Track races under auspices of Seattle Speedway Association.

July 15, Detroit, Mich.—Distributers' Convention of the Briggs-Detroiter Co.

July 17-18, Seattle, Wash.—Seattle Motor Speedway's speedway races.

July 25, Portland, Wash.—Portland Automobile Club's track racemeet.

July 25-26, Belgium—Royal Automobile Club of Belgium's Belgian Grand Prize 2½- and 4-liter race.

July 30, Aug. 1-3, Galveston Beach, Tex.—Galveston Automobile Club's racemeet.

Aug. 2-9, Grenoble—Automobile Club of France's six-day motorcycle and cyclecar reliability contest in French Alps.

Aug. first fortnight, Auvergne, France—L'Auto's Coupe de L'Auto 2½-liter race.

Aug. 16, Le Mans, France—Automobile Club de la Sarthe's Coupe Internationale light car race, 1 liter, 400 maximum cylinder area and 350 to 500 kilos weight.

Aug. 17, Le Mans, France—Automobile Club de la Sarthe's Grand Prize de France for 4½-liter cars.

Aug. 21-22, Elgin, Ill.—Road races under the auspices of the Chicago Automobile Club.

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Your Car is Our Obligation

THE true value of your car is in exact ratio to the pleasure and permanent service it gives you. Pleasure comes only from absolute confidence in your car at all times.

Only a car that is good as a *whole* car can give you this complete confidence. Will you be satisfied with less, when this confidence can be found in the *National?*

No matter how attractive some *one* feature may be, a car must be a harmonious *unit* to satisfy the motor-educated people who find confidence and pleasure in their *Nationals*.

Our responsibility is that the *National* must not only be good when first sold, but it must remain good and reliable.

Our success for fourteen years has been built upon a solid foundation of satisfied owners, yes and more, *enthusiastic* owners. Remember the *National* are not quantity builders, but quality producers. We have the best motor car reputation on earth to sustain.

Even if the *National* was not the most beautiful car on earth today people would buy it because of the implicit faith they have in its builders. But it is the best looking and most attractively designed car today — long, low, graceful, distinctive and exquisitely finished down to the smallest detail. It is the most comfortable car you ever rode in. It is spacious, luxurious and convenient, and "you don't have to raise the hood" before buying to make sure there are no mechanical mistakes. We put the right material in the correct place.

National SIX—$2375. Our Newest Triumph

Write Us for Catalog "O" or the Name of Our Nearest Dealer

National Motor Vehicle Co., :: Indianapolis, Ind.

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THE ABOVE photograph is a reproduction of a very curious and interesting carved slab alleged to have been recently uncovered in the tomb of Rameses III, famous as the greatest patron of mechanical arts in that famous dynasty of ancient Egypt.

Although the inscription at the top of the slab has not been satisfactorily deciphered, it would seem that that early race achieved a degree of mechanical attainment greater than even their marvelous work on the Pyramids would indicate.

From the facial expressions so skilfully depicted by the unknown artist, we may conjecture that the difficulties which beset even some present-day makers of technical apparatus had their counterpart in the problems confronting the brown-limbed artificers whose task—apparently testing the current consumption of some electrical device for automobiles—is so graphically portrayed in this singular fragment.

RUSHMORE DYNAMO WORKS *Plainfield, N.J.*

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KICK

85% Of All Electrically Equipped Cars in the Country Are Regularly Supplied With

GLBA
TRADE MARK REGISTERED

Storage Batteries

If you find in your battery box one of the many "just-as-good" imitations,

KICK

The highest as well as the lowest priced cars have adopted the GLBA as standard equipment after proving it to be the best Storage Battery in the world.

Regardless of the price of your car, you are entitled to an GLBA battery and you'll get it if you

KICK

The difference in price between the GLBA and the "just-as-goods" is so slight that no dealer will lose the sale of a car for the saving, so

KICK

GLBA WILLARD STORAGE BATTERY CO. GLBA

Cleveland, Ohio

New York Branch: 136 W. 52nd St.
Chicago Branch: 2241 Michigan Ave.
Detroit Branch: 736-740 Woodward Ave.
San Francisco Branch: 821 Monadnock Bldg.
Indianapolis Branch: 318 North Illinois Ave.

SERVICE STATIONS IN ALL PRINCIPAL CITIES IN THE UNITED STATES, CANADA AND MEXICO

(105)

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MOTOR WORLD

The Dealer's Paper



The Publication Serves the Manufacturer Best Which Helps the Dealer Most.

ALL advertising is an effect—an influence. In the automobile business, any advertising campaign that is not designed to have a strong dealer effect and a strong influence upon the trade is poorly, even thoughtlessly planned and will fall far short of what it might have accomplished. This is so because advertising effort must go before and parallel to selling effort, and trade advertising should be your intimate personal connection with your actual or potential selling force.

Motor World is the Dealers' Favorite Trade Paper

because it helps them, and by so doing gives double the influence to its advertising, logically.

Advertising is done for effect. Dealer effect advertising should be done in the dealers' paper.

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During the past week the Society of Automobile Engineers held its annual summer meeting at Cape May, New Jersey.

This organization is composed of the engineers of all automobile, motor truck and parts companies in the country. Its purpose is to standardize and in every way possible better the modern automobile.

It is a significant fact that a great number of these well known engineers specify Hyatt Quiet Bearings in the cars they build.

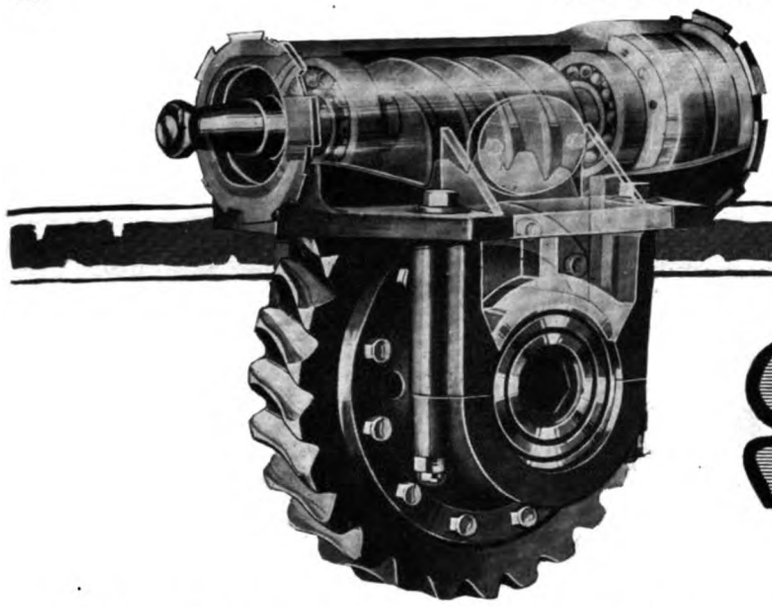
Two books, one about motor car bearings in general for prospective purchasers, the other for automobile owners, will be sent on request.

"Hyatt Quiet Bearings"

HYATT ROLLER BEARING CO.
DETROIT. CHICAGO
NEWARK. N.J.



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SHEL

THE fact that in our half century of experience and research we have learned how best to make Sheldon springs and what to use in their making is really only an incident in the supremacy and dominancy of those Sheldon springs. The real important fact is that by the most exhaustive analyses, tests and checkings we insist always upon knowing that this best material is always used and that these best methods of handling that material are common practice throughout our entire organization.

SPRINGS

It is well enough to know that steel of a certain specification is the proper steel from which to make certain springs, but if the steel makers do not follow these specifications in the making of this steel the knowledge of the proper formula is of no value. So that it has always been a never failing practice in the Sheldon factory to test and check up all materials and every operation in the most exhaustive manner to make sure that the finished product will live up to its fullest possibilities of performance. For that reason, every single shipment of steel is most carefully analyzed, and if it does not conform in minutest degree exactly to our formula, that raw stock is never made into Sheldon springs. And even the baths that are used for quenching during the heat treating process are subjected to the closest sort of chemical analysis to insure their uniformity and consequently a rational consistency in the finished product.

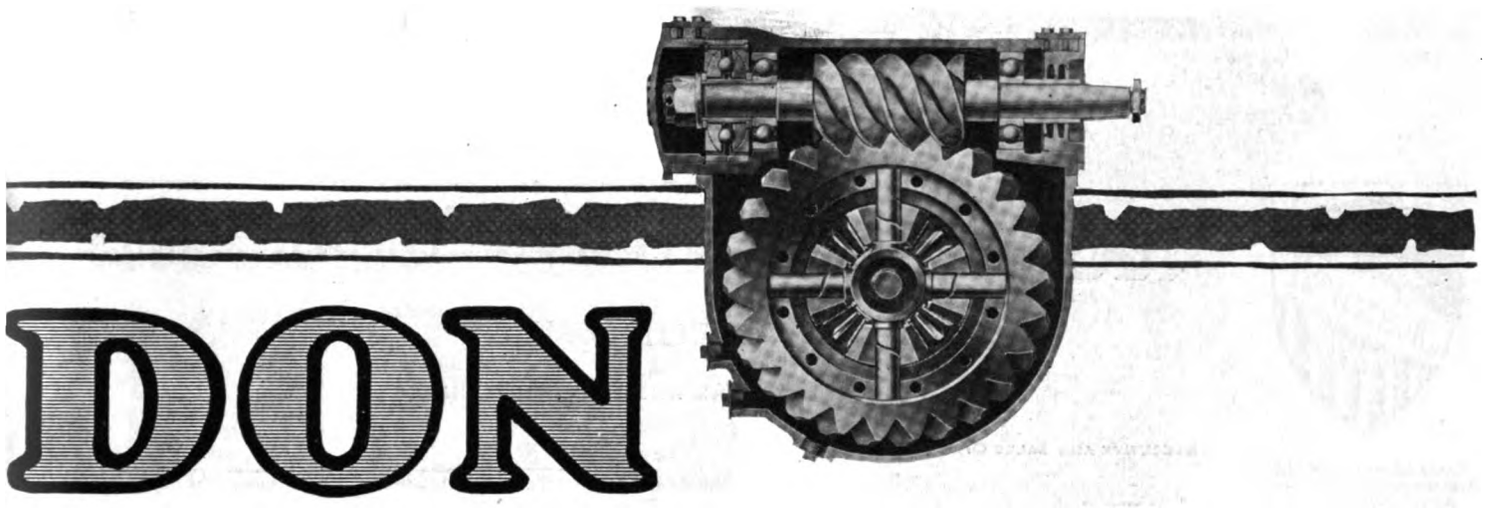


As we have said before, the finished spring, in spite of all these preliminary precautions, is thoroughly subjected to extreme tests for hardness, toughness, brittleness, bending, tension, twisting, shock and endurance. Of all these tests the most important is the final test of vitality, or, as it is called, the "endurance test." An ordinary spring would require at least many months to determine if it possesses any exceptional endurance and it may take several years, perhaps, to break it. But in the Sheldon "life tests," which are made on machines especially

SHELDON AXLE COMPANY,

Makers of Springs and Axles for Heavy Duty Service for More than Fifty Years

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designed for this very purpose, the lesson of years is learned in as many days or even in as many hours.

So important is this test in particular and all the other Sheldon tests in general, that in subsequent copy we will go into these separately, dwelling at length upon the details followed in each and every one of these tests so that even the layman may realize fully just how important a part they play in the acknowledged supremacy of the finished Sheldon product.

WORM GEAR AXLES

In order to emphasize even more fully than we have in the past the practical reasons for our unlimited enthusiasm and confidence in the correctness of Sheldon worm gear design and construction—especially its relation to the use of double thrust ball bearings in the handling of the heavy thrust load of the worm shaft in operation—we wish to cite here a few specific facts that have been proved in practice.

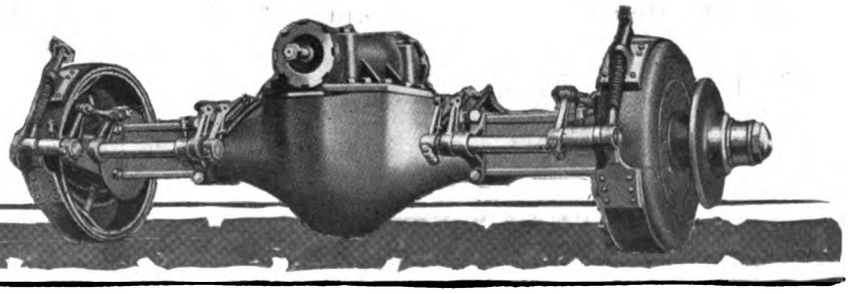
By means of a series of varied tests we have been able to demonstrate the fact that in the Sheldon type of worm gear rear axle we are getting power efficiency at the rear wheels varying from 94% to 97% of load applied. This remarkable efficiency combined with the fact that the London omnibuses, using practically the same type of construction, are operating something like 3,000 buses on the streets of London with the absolute minimum of repair and upkeep that they have ever experienced, bring to your notice two concrete facts that certainly must go a long way towards the substantiation of our claim of superiority.

When you can operate a truck with a showing of from 94% to 97% efficiency in relation to a load applied, when that truck shows the minimum of upkeep and repair, and when you are almost certain to get from 60,000 to 80,000 miles of service out of the working parts of the axle, then surely it is safe to say that axle designing and construction has almost reached the idealistic stage of perfection.

And all of this high efficiency present with practically a noiseless operation. In Sheldon axle construction it is utterly impossible to hear anything but the slight hum of the ball bearings, and even this noise is practically drowned with the bath of oil in which the ball bearings are immersed. In fact, the tendency towards noise in worm gear construction is the direct opposite to that of any other type of gear construction. For in worm gears the longer they are used, right up to the very end of their life, the less is the possibility of noise, while in other gear construction the amount of wear and tear is usually measured by the noise made by the gears themselves.

Wilkes-Barre, Pa.

CHICAGO, Peoples Gas Bldg., 122 S. Michigan Blvd.
SAN FRANCISCO, - - - - 444 Market Street
DETROIT, - - - - - 1215 Woodward Avenue



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Cable Address "MAXCO"
WESTERN UNION LIEBER'S and A.B.C. 5TH EDITION CODES.

MAXWELL MOTOR SALES CORPORATION

AUTOMOBILES

WOODWARD AND WARREN AVENUES

EXECUTIVE AND SALES OFFICE

DETROIT, MICH

June
26th
1914.

THE NEW 1915 MAXWELL "25."

EXTREMELY IMPORTANT TO DEALERS IN AUTOMOBILES.

Between July 15th and August 1st we shall announce,- place upon display and exhibit our new 1915 Maxwell "25," to retail at $750.

We shall begin the distribution throughout the country of this new 1915 "25" model by August 1st.

We confidently expect to be able to build 60,000 of these new 1915 "25" models retailing at $750. within one year.

We shall do all that human endeavor and our immense factory facilities can do to build at least 60,000.

I confidently predict that this new Maxwell "25" retailing at $750. will be the greatest sensation that the automobile world has ever known.

I base this prediction upon the car from the ground up - its chassis; its motor; the lines and size of its body; and the unexpected extra and additional features which will be placed upon this car.

Walter E. Flanders.

President,

Maxwell Motor Co., Inc.

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The Two Biggest Things in Toledo

OVERLAND
250 CARS DAILY

CHAMPION
25 000 SPARK PLUGS DAILY

Again we call your attention to one of the big users of CHAMPION SPARK PLUGS. The Willys-Overland Company is the second largest producer of motor cars in the world. Their big business has been based upon the high efficiency of their cars, and since no motor can give efficiency without an efficient spark plug, their selection of Champion Spark Plugs is significant.

This is one of a large series of four page advertisements telling about our big users and the wonderful characteristics of CHAMPION SPARK PLUGS.

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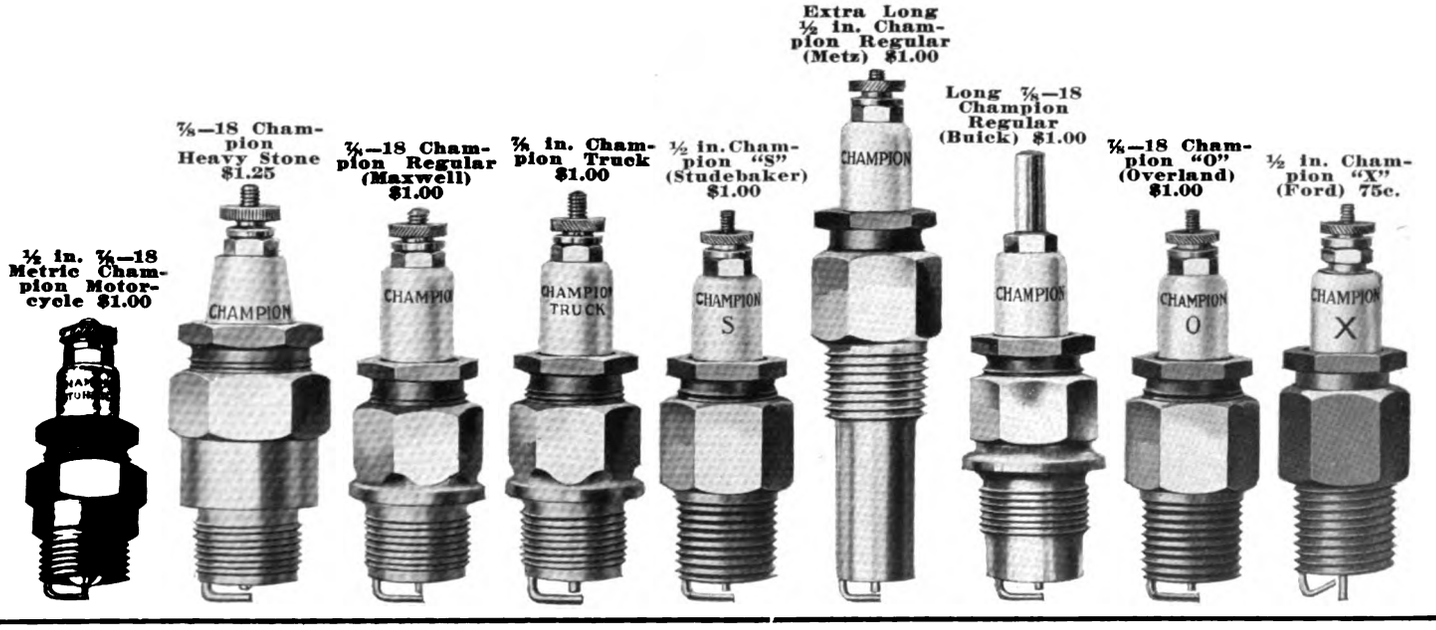
The man who owns an Overland car has confidence in Overland Engineers or he would not have purchased it. Hence, he must have confidence in the Overland CHAMPION SPARK PLUG, the best that the Overland Engineers could select.

One of the most progressive and surprisingly successful manufacturing organizations in the entire United States is the Willys-Overland Company. In a few years' time they have leaped from the almost unknown to their present dominating position in the industry.

The tremendous Overland reputation would be jeopardized by a single mistake in judgment, and that is why, after the most careful analysis, they selected CHAMPION SPARK PLUGS.

The biggest, most important small part on a car is the spark plug. The efficiency of the motor is proportionate to the way this little device does its work.

All Fords, Overlands, Studebakers, Maxwells and forty-eight other well known makes of motor cars are equipped at their Factories with CHAMPION SPARK PLUGS.



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THERE MUST BE SOME VERY POTENT REASONS FOR THE TREMENDOUS SUCCESS OF THE CHAMPION SPARK PLUG.

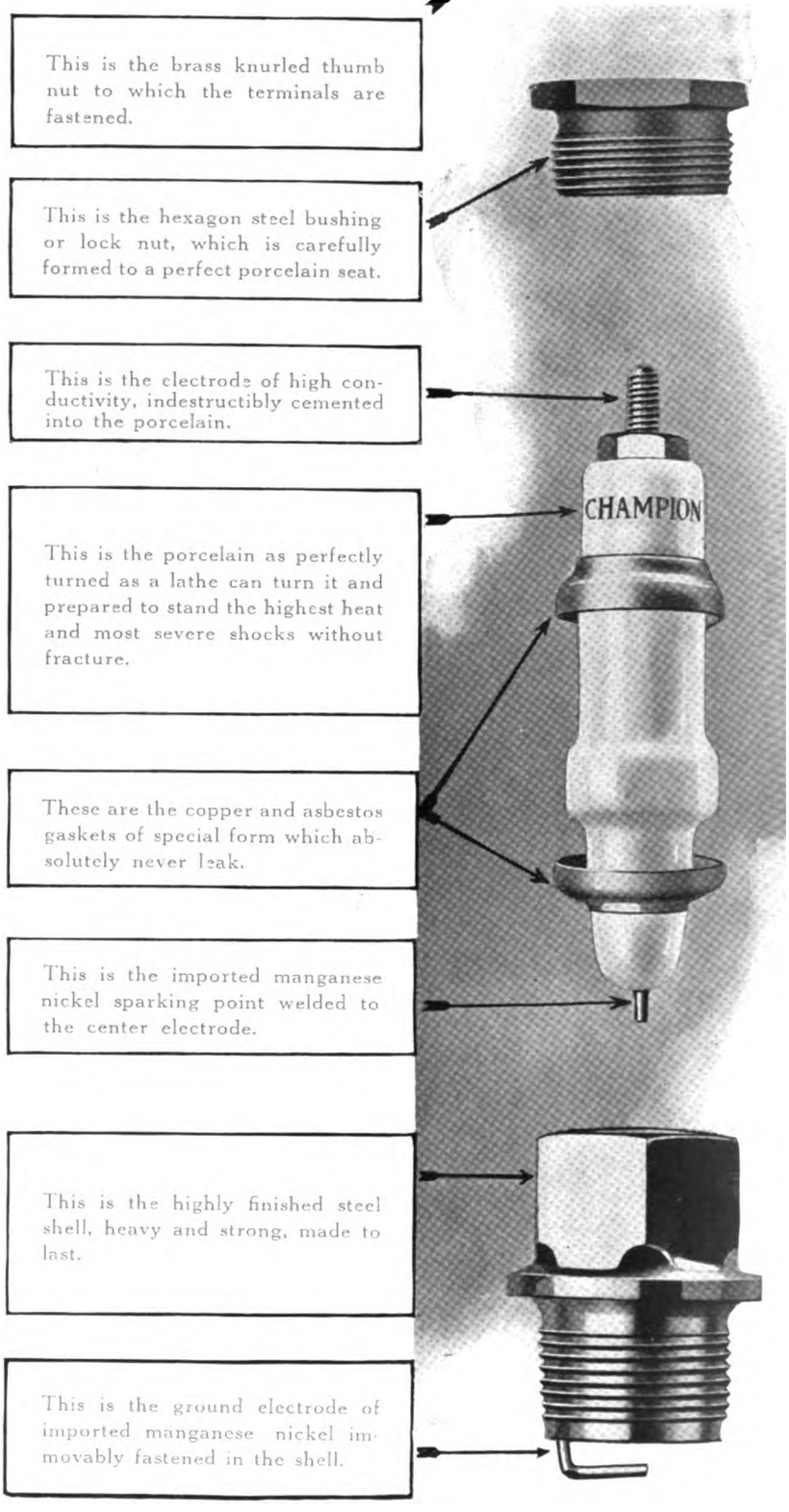
There are many, and here are a few of them:—

CHAMPION SPARK PLUGS do not fail. The finest equipment of automatic machines purchasable are turning out from solid bars the finished steel shells into which the porcelains are assembled. These shells are so perfectly machined, the porcelains are so truly concentric, and the gaskets made on our own machines are so uniform in thickness and shape that the evenly distributed tension when the spark plug is heated cannot break the core.

The imported manganese nickel spark points used in CHAMPION PLUGS are expensively welded to the electrodes, in order to make the "points that last." We could save $14,000 a year by doing as some other spark plug makers do, use carbon steel or straight nickel instead of imported manganese nickel. We prefer to spend the extra $14,000 and make a better plug.

Before a spark plug leaves our factory, it has been subjected to fourteen entirely separate inspections. These inspectors use micrometer gauges of special construction, and the slightest inaccuracy or lack of uniformity in any part is detected long before it reaches the assembly stage.

There are many other reasons for CHAMPION success, which will appear in our future advertisements.



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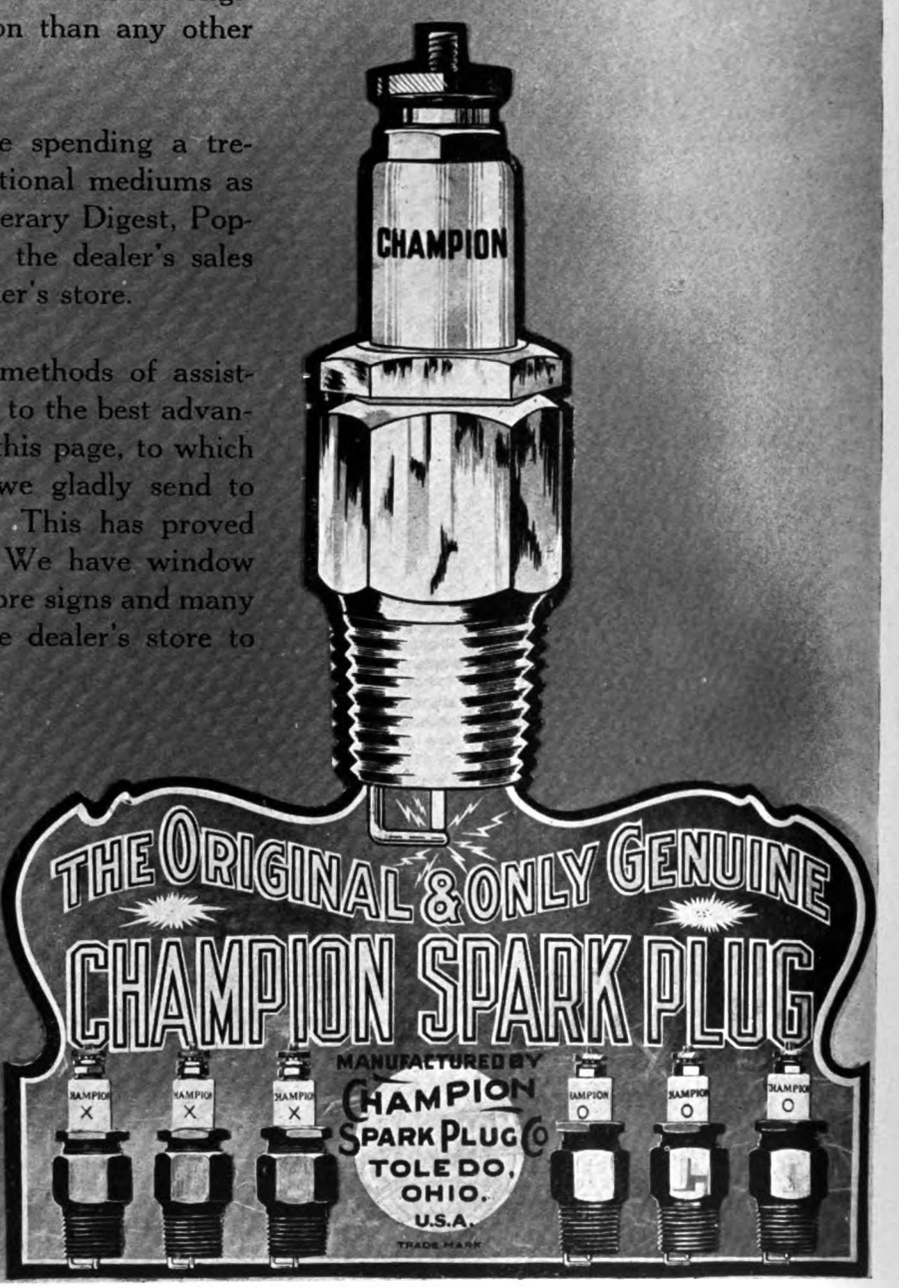
We Have Three Distinct Methods of Helping a Dealer to Sell CHAMPION SPARK PLUGS

FIRST: We make the best plug that we know how, and we believe that it has had more time, attention and engineering skill devoted to its perfection than any other plug made.

SECOND: We have spent and are spending a tremendous sum of money in such National mediums as Saturday Evening Post, Collier's, Literary Digest, Popular Mechanics and others, to boost the dealer's sales and bring the car owner into the dealer's store.

THIRD: We have many effective methods of assisting the dealer in displaying our plugs to the best advantage. We have the cards shown on this page, to which six plugs are attached, and which we gladly send to any dealer who orders 100 plugs. This has proved itself to be a very helpful device. We have window transparencies, puzzle cards, metal store signs and many other things with which we link the dealer's store to CHAMPION PLUGS.

We now have over 35,000 distributors of CHAMPION SPARK PLUGS. If you are not among them, you are missing one of the biggest opportunities of the accessory business.



Champion Spark Plug Company, Toledo, Ohio

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WEED Anti-Skid CHAINS

The Magnet

that draws profitable trade.

DISPLAY WEED CHAINS IN YOUR WINDOWS AND SALES ROOMS AND YOU DISPLAY GOOD SOUND BUSINESS JUDGMENT AS WELL.

You will attract all types of cars to your doors—they all must use Weed Chains for safety's sake.

Post mortems **are never held over Weed Chains—they never make dead stock.**

Even when roads and pavements are dry the experienced motorist will buy—*"In time of sunshine he prepares for rains, stops at his dealer's and buys Weed Chains."*

Don't forget to order a stock of Weed Cross Chains, too. We will send you an attractive board on which you can display our Cross Chains to the best advantage if you will but write for it. Now's the time. Write for it now.

Weed Chain Tire Grip Company

Bridgeport, Connecticut

Manufactured for Canada by

DOMINION CHAIN COMPANY, Limited

Head Office: Shaughnessy Building, Montreal, Canada

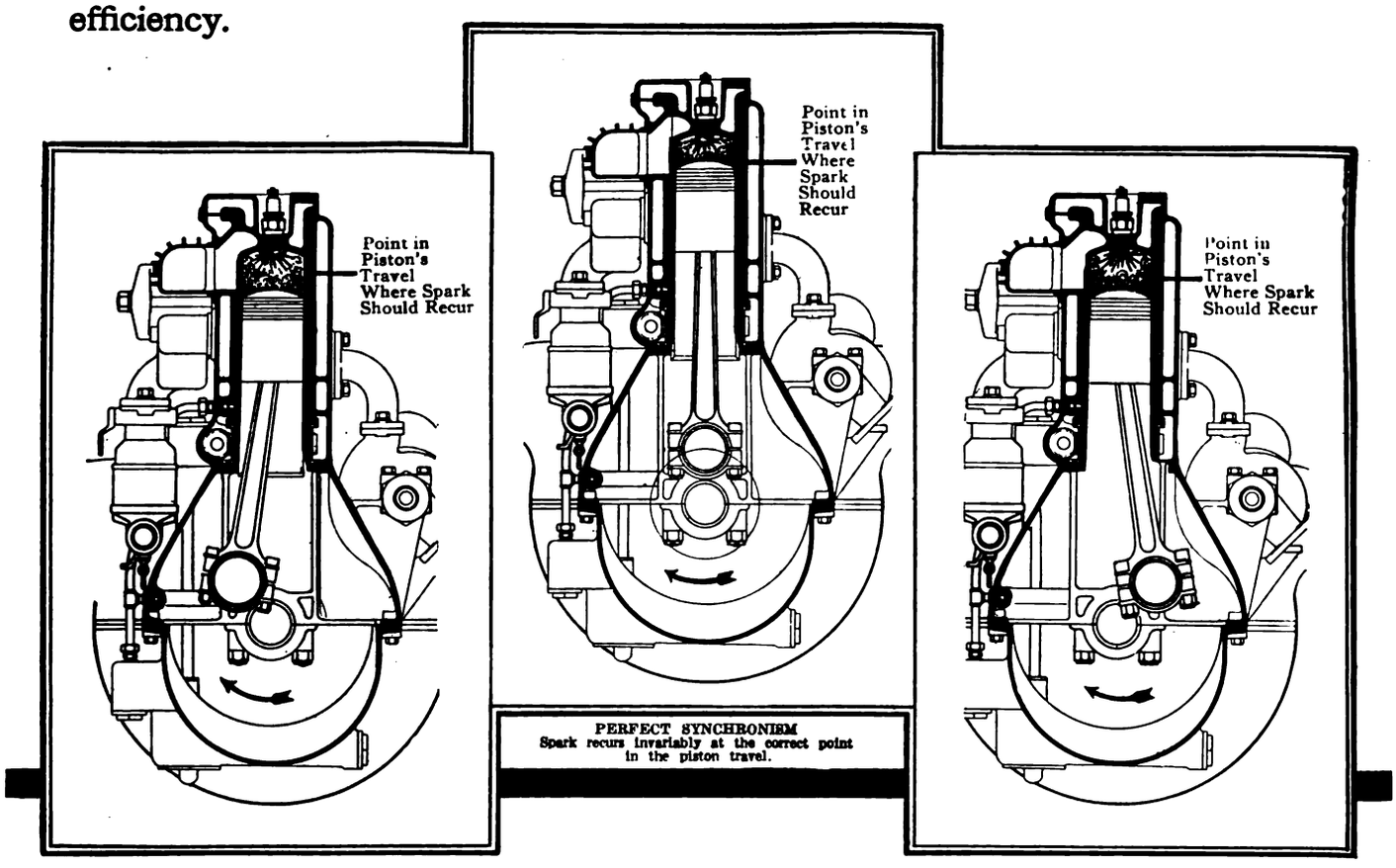
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CONNECTICUT AUT

Dynamometer tests establish the truth of our claims that the spark produced by Connecticut Automatic Ignition is more effective under service conditions than the magneto's spark.

Besides the quality of the spark produced, there is another vital factor to be established—*synchronism*—before increased motor efficiency will result, for the greatest horse-power can be obtained only when the spark occurs at a fixed point in the piston's travel.

The rapidity of flame propagation or the time consumed in igniting a full charge of gas is as much dependent upon synchronism as upon the efficiency of the spark. Rapid flame propagation has a direct bearing upon motor efficiency.



LACK OF SYNCHRONISM
Loss of power always results from a spark occurring too early.

PERFECT SYNCHRONISM
Spark recurs invariably at the correct point in the piston travel.

LACK OF SYNCHRONISM
Loss of power always results from a spark occurring too late.

All high tension ignition is based on a break in the primary circuit; that is, the high tension spark should occur simultaneously with the break in the primary. However, three factors, which may or may not require time for their accomplishment, enter after the actuating mechanism in the primary circuit is set for firing and before the explosion occurs. They are——

FIRST: The time consumed in mechanically accomplishing the break.

SECOND: Induction lapse, or the difference in time between the break in the primary and the occurence of the high tension spark.

THIRD: The rapidity of flame propagation dependent on the quality of the spark.

This time factor is known as *lag*, and if it is variable, up to the point where flame propagation starts, it is a serious menace to synchronism.

These are almost intangible factors, but none the less vital. They can be eliminated only by perfection in such elements, both mechanical and electrical, as control them.

In the design and makeup of Connecticut Automatic Ignition the first consideration was the perfection of the actuating mechanism. There is only one rotary relationship in its breaker box to be established and it is the same in all positions. The action of accomplishing the break in Connecticut Automatic Ignition is direct with

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DMATIC IGNITION

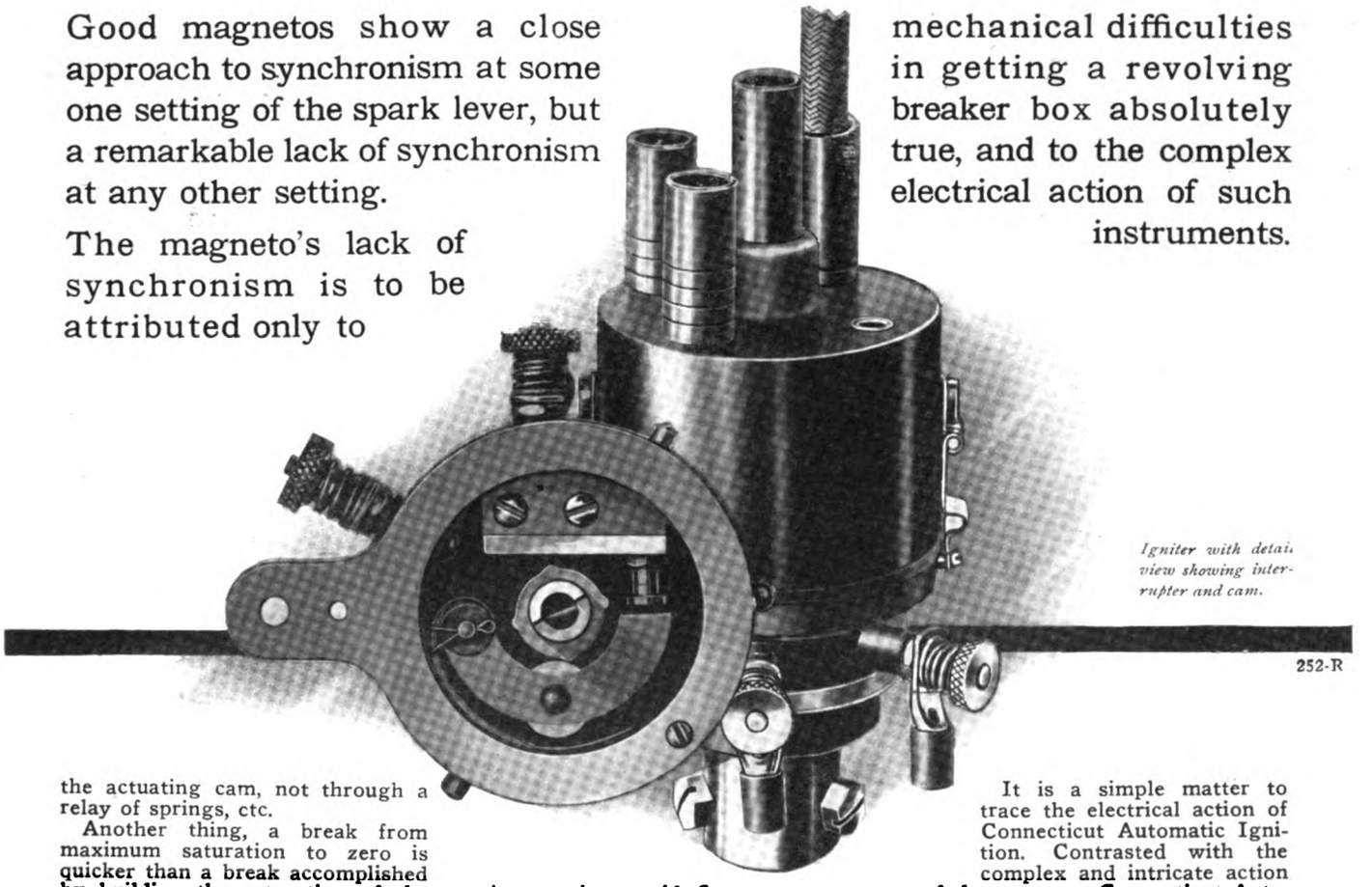
Connecticut Automatic Ignition gives absolute synchronism under every service condition. Simplicity is the dominating characteristic of both its mechanical and electrical action.

Synchronism means that the action of the ignition system, in relation to the action of the motor it serves, is practically perfect—in other words, the spark delivered by an ignition system, working synchronously, must recur invariably at a fixed point in the piston's travel with a certain spark adjustment.

The direct way in which the igniter breaks its primary circuit—the way it reduces induction lapse, or the difference in time between the break in the primary and the occurrence of the high tension spark, to absolute zero—and the rapidity with which its intense spark fires the charge of gas leaves no opportunity for either mechanical or electrical lag to accrue—regardless of engine speed.

Good magnetos show a close approach to synchronism at some one setting of the spark lever, but a remarkable lack of synchronism at any other setting.

The magneto's lack of synchronism is to be attributed only to mechanical difficulties in getting a revolving breaker box absolutely true, and to the complex electrical action of such instruments.



Igniter with detail view showing interrupter and cam.

252-R

the actuating cam, not through a relay of springs, etc.

Another thing, a break from maximum saturation to zero is quicker than a break accomplished **by building the saturation of the primary coil from zero to maximum. The high tension spark resulting from such a break is most intense, and of the greatest value in securing rapid flame propagation, for flame propagation with a spark delivered synchronously is dependent on the quality of the spark.**

It is a simple matter to trace the electrical action of Connecticut Automatic Ignition. Contrasted with the complex and intricate action **of the magneto, Connecticut Automatic Ignition manifests a remarkably simple mode of operation, electrically as well as mechanically.**

CONNECTICUT TELEPHONE & ELECTRIC COMPANY, Inc.

MERIDEN CONNECTICUT

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Listen, Mr. Dealer

That Kellogg pump runs as smoothly and quietly as the best automobile engine you ever saw. The Kellogg pump is made skilfully by the best of mechanical men. It is durable and will continue to be the best companion for any good motor.



The 4-cylinder Model with attachments for over 30 cars—only $30.

Engine Driven KELLOGG Air Pump

One, Two, Four, Six-Cylinder Models

With Attachments and Instructions, Ready to Install



2-Cylinder Pump with Attachments for Buick "25," "26," "37"; Mitchell "4" and "6"; Overland "59," "69," "79"; Reo "5"; Stutz "4" and "6." Complete Cost, $26.

If you are selling an old car without a starter, put on a Kellogg Air Starter Unit and see how much easier you can sell the car. Put a Kellogg Air Pump on your demonstration car and show it to your prospects. The Kellogg Pump is an indication that the car is built and equipped for the owner's comfort and economy.

The owner does not have to have misfit gears made. For 5 years we have been designing special attachments to go with the different designs of our pumps so that they would give maximum efficiency on every car. You cannot go wrong in installing the pump that is standard or special equipment for these cars:

Packard	Franklin	Imperial	Howard
Peerless	Winton	Jackson	Mitchell
Stevens-Duryea	Havers	Lexington	Fiat
Lozier	Stearns	Chandler	Speedwell

and made with special attachments that any dealer can install on the

Chalmers 1914	Overland	Cole
Hudson	Stutz	Simplex
Maxwell 6	Pierce	Henderson
Studebaker Six	Cadillac	Oakland
Buick	Reo	Abbott

Write for Discounts to Trade. Give us Names of Owners

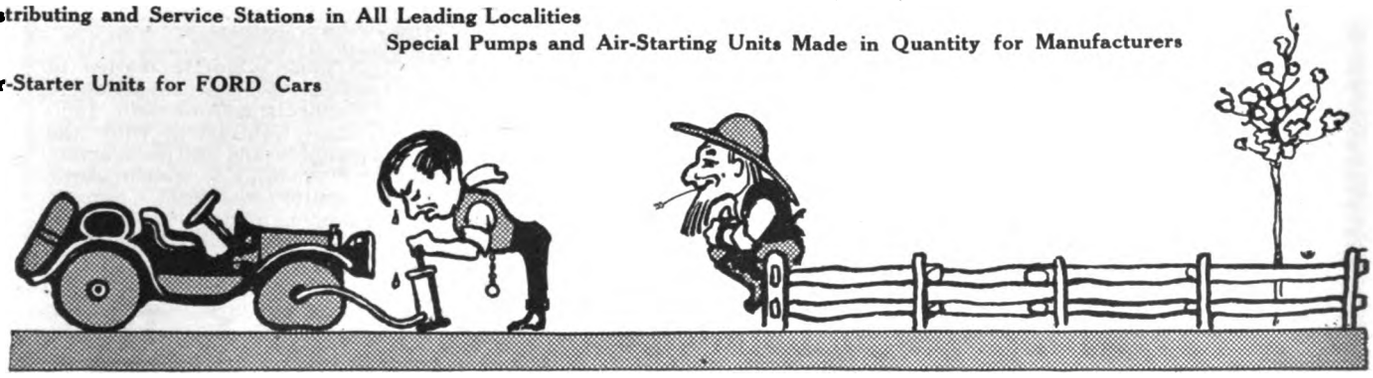
KELLOGG MANUFACTURING CO., 112 Circle St., Rochester, N. Y.

New York San Francisco Detroit Chicago

Distributing and Service Stations in All Leading Localities

Special Pumps and Air-Starting Units Made in Quantity for Manufacturers

Air-Starter Units for FORD Cars



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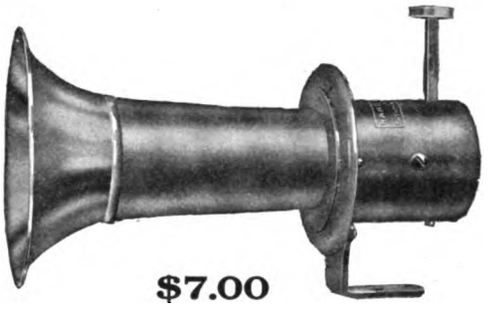
VICTORY *for* NEWTONE

Klaxon Patents Declared Invalid
Newtone Horns Do Not Infringe

¶ The Court of Appeals on June 9th unanimously rendered a decision against The Klaxon Co., by declaring all the 48 claims of all the Hutchison patents in suit **not** infringed by "Newtone," concluding that the basic claims of the patents are invalid and that the claims covering the specific details, valid, are not infringed by our "Newtone"; with costs in favor of The Automobile Supply Mfg. Co.

¶ This decision affirms what we have been assuring you for the last four years.

NO Battery Expenses
NO Motor Troubles
NO Electrical Wiring
NO Adjustments



$7.00

A loud, steady blast is emitted by a slight touch of the hand—as compelling as any motor-driven horn.

$7 *The Handphone* $7

The latest and most efficient Hand Operated Horn on the market. It has created a sensation in the trade for its tone-efficiency and low price.

Our ***Newtone Superior*** (Motor-driven) and ***Handphone*** (mechanical) Horns are the best signals that money can buy—their low price is made possible by our enormous production and splendid manufacturing facilities.

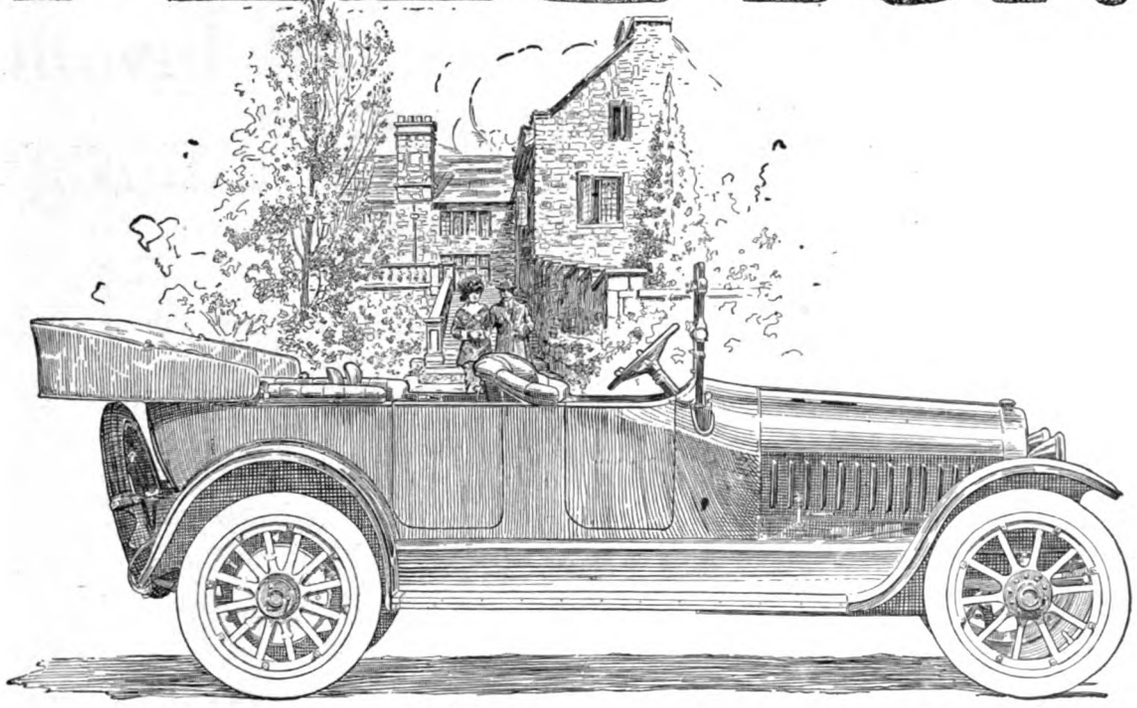
Orders Promptly Filled In Any Quantities

Automobile Supply Mfg. Co.
220 TAAFFE PLACE BROOKLYN, N. Y.

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"The Easiest Riding Car In The World"

MARMON



Why?

Some one sells the high class cars in your town!

Do You?

The big man of your town—the man who ***wants*** and ***demands*** the best—will not be satisfied by a ***compromise*** car.

No matter what car you are selling at a low or medium price you cannot entirely satisfy this man. His success entitles him to the best and he wants it.

The Marmon "41" is a car built for the man who ***knows*** and ***insists*** upon the best.

Some wise dealer, somewhere, will supply him.

WHY NOT YOU?

The Marmon "41"—132 inch Wheelbase, $3250

"Over Sixty Years of Successful Manufacturing"

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"The Easiest Riding Car In The World"

MARMON

Here's the Proposition

To ***one***, good, established dealer in each town where Nordyke & Marmon Company is not represented, we will make a most interesting proposition.

It will enable you to supply the big men in your town with a car that is ***sure to satisfy.***

It will enable you to deliver a car that will give the service that makes friends for you.

It will help you to call every fact concerning this car to the big man's attention without loss of time.

It will bring to your direct aid the trained services and sales ability of a big organization.

It will benefit your business on the low or medium priced cars you are now selling.

It is the ***first, live, logical*** sales plan for the profitable sales and service of a high class car in a restricted sales field.

All that we ask is active, earnest, enthusiastic selling effort and fitting representation for a concern whose reputation for honest value extends over sixty-three years of successful manufacturing and merchandising.

If you are this representative and want to make a ***profitable*** addition to your business which should become a ***permanent*** asset, we will be glad to hear from you—NOW!

NORDYKE & MARMON CO.

(Established 1851)

Indianapolis, Indiana

The Marmon "48"—145 inch Wheelbase, $5000

"Over Sixty Years of Successful Manufacturing"

Digitized by Google



"A Sign of the Times"

See that sign! It used to read just Hardware. Now it reads Hardware and Auto Supplies. Why the change?

Because the dealer had so many calls for Auto Supplies that he saw it to his interest to **sell** them and let people **know** it. It's simply a "Sign of the Times.".

All over the country Hardware Dealers are catering to the trade of Automobilists. They have found it pays.

The Surest Way for Accessory Manufacturers To Reach Hardware Dealers

is to advertise in the paper that the leading Hardware Merchants read. That paper is **"Hardware Age."**

It reaches over 17,000 Hardware Dealers every week, included in which circulation are substantially 1,000 Jobbers. Over 7,200 towns and villages are represented on its mailing lists. **"Hardware Age"** is the leading paper in its field. It has been established for 60 years. Those who use its columns are advertisers of sound judgment.

They know that the credit of most Hardware Merchants is good. You have only to refer to Dun's or Bradstreet's to verify this.

The cost of reaching this army of Hardware Retailers and Jobbers through **"Hardware Age"** is less than most manufacturers suppose.

A Sample Copy of the paper and full particulars will be sent on request.

Hardware Age

239 West 39th Street

New York City

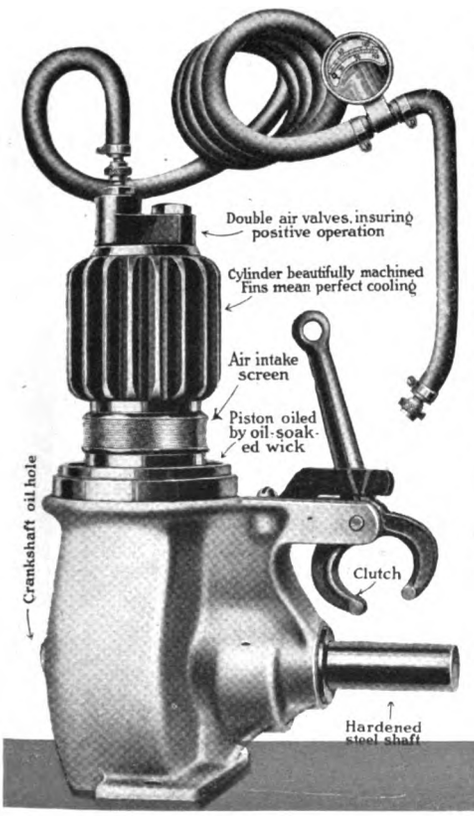
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A Chance to Make a Profit on practically every Car in Your Vicinity— (no matter whether you sold the cars or not)

EVERY car owner is after a satisfactory Tire Pump to be run by his motor. Nobody wants to pump tires by hand any more. It's a bad job on *any* day—a frightful job under the scorching heat of the summer sun. And a hand-pumped tire is *never* sufficiently inflated. It rim-cuts; it wears due to friction; it drags on the road. Hand pumping means increased tire expense.

Thousands of car owners have to climb out in the hot sun and laboriously try to pump a tire with a hand pump. They're all waiting to be sold a good, efficient, positive and quick-acting power pump,—and at the *right price*. The one that fills the bill in every way is the

Stewart Tire Pump



Hundreds of car owners in your vicinity are in the market for a Stewart Tire Pump. You might just as well be the one to take the profits of making the sale and the installation. The dealers who go after this business with both feet are going to make a mighty good thing of it. The selling field has practically *no limit*.

The Stewart is the most efficient, finely finished, dependable tire pump made. The piston is steel; the connecting rod hardened steel; the cylinder beautifully finished, having fins for perfect air cooling. The piston is oiled by rubbing against a wick upon which oil is dropped from the outside. This is the only piston pump that absolutely prevents oil from getting into tires. It has no leather or rubber packings to wear out and cause leakage. The base is aluminum. The retail price, with air pressure gauge and 13 feet of high-grade hose, complete, is only **$15**

Fittings to install on car, per set $2.50

When ordering, give name, year and model of car the pump is wanted for.

This is the best pump, the best price, the best proposition you can possibly offer. It means sure money. Write for Dealers' Proposition.

Stewart-Warner Speedometer Corporation

Executive Offices: 1949 Diversey Boulevard, Chicago

Factories: Chicago and Beloit, Wisc.

17 Branches. Service Stations in all cities and large towns.

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MAYO RADIATORS



EVENTS have proven that more courage and ability are required to imitate Mayo quality than to copy Mayo design. Quality is the basis on which Mayo Radiators have been built and will continue to be built.

MAYO RADIATOR COMPANY

New Haven, Connecticut

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A Plain Talk About Chalmers Policy

To Motorists Everywhere:

You who read Motor World regularly see a great many page and double-page automobile advertisements.

Many of these automobile advertisements read much alike.

The reason for this is the similarity in many respects between some of the most favorably known and most widely sold cars.

Chalmers Cars Are Different

Now Chalmers cars—the "Light Six" at $1800; the "Master Six" at $2175—are different from others because they are distinctively Chalmers — because they are built by Chalmers men in the Chalmers shops.

And we want to make this a different kind of an automobile advertisement if we can. We will leave out such words as "best," "greatest," "finest," "lightest," and so forth, and try to give you some definite idea of what there is about Chalmers cars that makes them different from others.

We will begin by making this statement, which you have never before read in any automobile advertisement:

We have never lost a sale to a prospective buyer who has seen the Chalmers "Sixes" being made in the Chalmers factory.

This tells you, first of all, that Chalmers cars are built complete in the Chalmers plant. No "assembling" company could make a statement of this kind, because to see an assembled car being manufactured, one would have to visit many cities and many factories.

Our statement tells you next that Chalmers quality is a definite thing which can be readily appreciated once you have seen the Chalmers methods of manufacture, and the materials which go into Chalmers cars.

Undoubtedly those who visit the different automobile factories before buying a car have an advantage over those who cannot. We will try, therefore, to tell you in detail what it is that makes those who visit the Chalmers factory buy Chalmers cars.

Chalmers Quality In-built

Probably the first thing that would impress you in the Chalmers plant is the fact that quality is something that must be "built in" an automobile. You would see that this quality means painstaking workmanship by skilled mechanics; rigid inspection; up-to-date machinery, and high grade materials.

In the Chalmers factory you would be impressed with the fact that Chalmers cars ***must*** be of high quality to protect the Chalmers investment. The Chalmers Company is in business to ***stay.*** You would see 30 acres covered with big, permanent buildings, which have more than a million square feet of floor space. These buildings and land are owned free from encumbrance by the Chalmers Company.

Nearly 4,000 trained employees work in Chalmers shops.

As you walked through the Chalmers plant you would see that every important part that goes into a Chalmers car is built in the Chalmers works.

Public Will Decide

Just now there is considerable discussion on the subject of automobile weight. You may remember that there was some discussion about power a few years ago.

The public settled the question of horsepower—as it will eventually settle the question of weight.

Buyers did not want extreme high power. They did not want extreme low power — ***they wanted medium power.***

In the same way the public will ultimately decide that overweight means ***excessive*** upkeep. The public will also decide that underweight means ***lack of strength and easy riding qualities.***

It costs money to pull useless weight, but it costs more money to repair broken parts whose strength has been sacrificed in the rush to get aboard the light car "band-wagon."

The people who buy Chalmers cars are settling the weight question ***now.*** They are settling it ahead of others in the way that it will be eventually settled — by purchasing medium weight cars.

In Chalmers cars there is no skimping at expense of safety and strength. All parts that should be big and strong are made big and strong. We save on weight where weight is not needed for safety.

And no lighter car than the Chalmers uses better materials. We use as good materials as money can buy, and we don't overweight any part of our car because we don't like to spend money uselessly for materials any more than you would like to have us.

It is only because the Chalmers Company is satisfied with a small profit per car that we are able to build such values into our product at Chalmers prices. Our profit on the $1800 "Light Six" is less than $100 per car. And you pay one profit only when you buy a Chalmers. For we build our own parts—do not purchase them outside.

We know of no other company marketing cars of the Chalmers price and quality that takes as small a profit.

We Are in Business to Stay

As we have often stated in Chalmers advertisements, we are in business to stay. We are not trying to get rich in a hurry. We believe that by building quality into Chalmers cars, by giving the utmost for the money and by being content with a small profit per car, but with a big production, we have found the surest way to maintain a big and permanent volume of business.

We know that quality counts. So we believe it will be even easier to sell Chalmers cars in two or three years than now. We are building for the future—and so we build quality first. Price comes afterward.

If you are considering a car below the Chalmers price don't let $100 to $300 stand in the way of your getting a real quality car easily worth many times the extra cost in value and service.

We would not reduce the quality of Chalmers cars to meet "price." It may be necessary to raise the prices of our cars later in the season. We shall certainly not lower the quality.

Chalmers Dealers Now Delivering 1915 Models

If you will visit the nearest Chalmers dealer, he will show you more ways in which Chalmers cars differ from others. He will be glad to give you a searching demonstration of the $1800 Chalmers "Light Six," or the $2175 Chalmers "Master Six," that will be a revelation to you.

1015 Chalmers "Light Six" Touring Car . . $1800
1915 Chalmers "Light Six" Coupelet 2050

Chalmers "Master Six" 5-passenger $2175
Chalmers "Master Six" 6-passenger 2275

Quality First

Chalmers Motor Company, Detroit

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PREMIER



1915 MODEL

A NEW SERIES 6-49

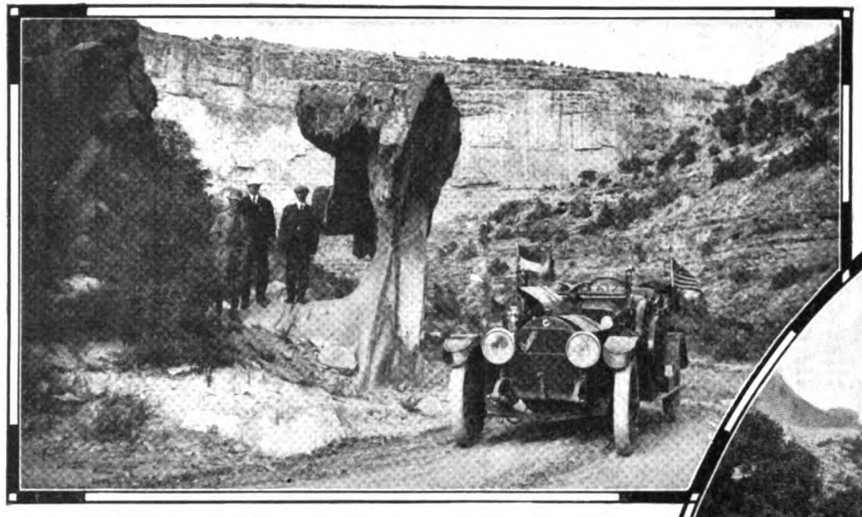
UNIT POWER PLANT, THREE-POINT SUSPENSION, ELECTRIC LIGHTS and STARTER, LEFT SIDE DRIVE, ONE-MAN TOP, STREAMLINE BODY, and the power to provide the snap, getaway and energy demanded by discriminating automobilists

Compare it, part for part, with *any car* offered the public, irrespective of price—then ride in the 6-49 and experience the smoothness, ease of riding, comfort, power and speed of this truly great 1915 Premier. Price, complete, f. o. b. factory $2385. *Catalog upon request.*

PREMIER MOTOR MFG. CO.
Indianapolis

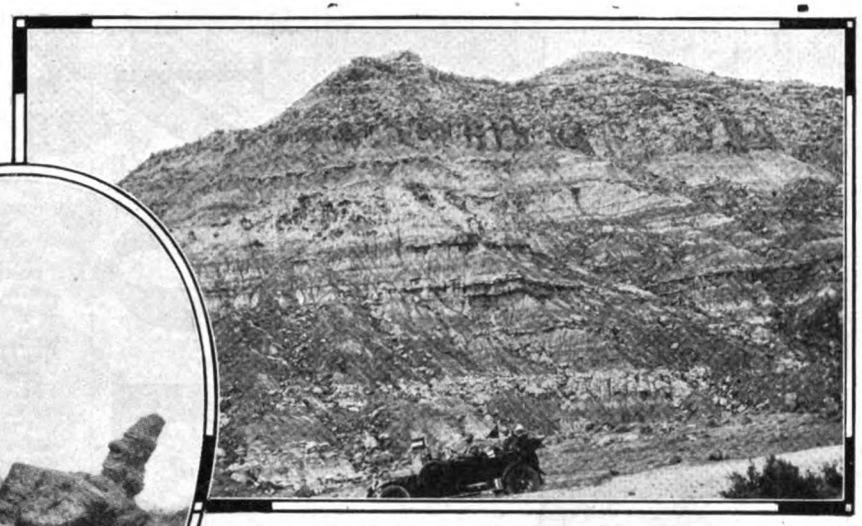
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Premier Continues to Blaze the Trail for the National Highways Association

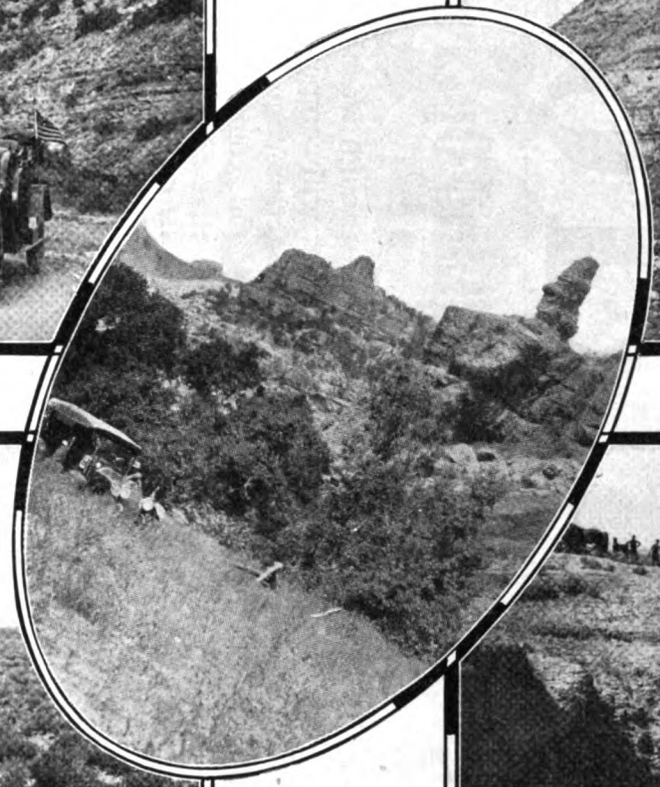


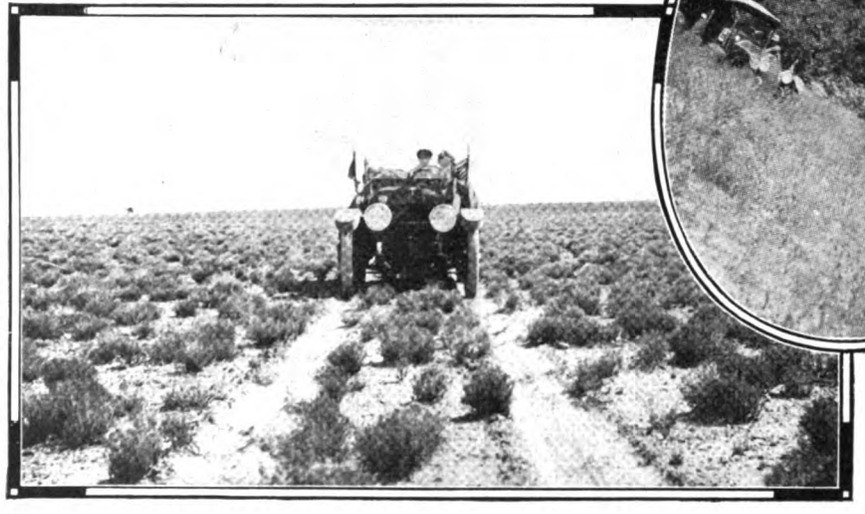
Did 17,000 Miles in 1913

From Coast to Coast



Will Do 18,000 Miles in 1914



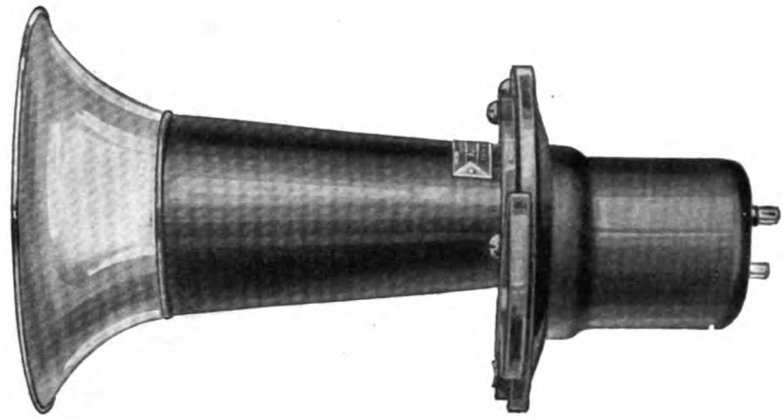


From the Lakes to the Gulf



Director of Transcontinental Highways, A. L. Westgard, uses a Premier exclusively because he can depend upon its efficient and economical performance over the 18,000-mile trip scheduled for 1914 as it did over the 17,000-mile trip in 1913

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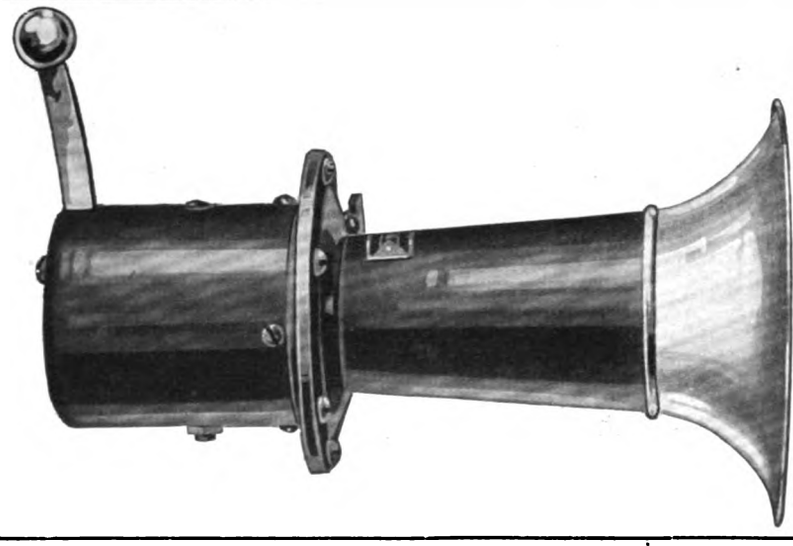
$9.50 to $15.00

SPARTON

Electric Motor Driven and Hand Operated Signal

The motorist cannot afford to depend on a good enough warning signal. When the time comes for action, he must have a horn that will compel quick, unthinking, instantaneous jumping—such is the discordant, action-compelling growl of the SPARTON when the button is pushed home. On country stretches a good pressure on the button produces a warning clarion that can be heard a mile down the road, giving everyone time to get out of the way. On city streets a light touch produces an inoffensive, but authoritative command, warning people at close range.

Hand Operated $7.00 and $8.00



Hand Operated $7.00 and $8.00

The Sparks-Withington Co., Jackson, Mich.

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Hot Weather Driving

—It simply takes the "starch" out of ordinary inner tubes. Don't trust to "luck" in selecting tubes and expect to get by without frequent punctures, pumpings and buyings.

Right now, of all times, your tires need the support of

Firestone

Red Tubes

You need the extra quality and quantity of rubber in Firestone Tubes.

You need the extra strength and heat resistance and "come back" of the Firestone special antimony cure.

You need the Firestone special building—layer by layer—greatest density of texture with maximum elasticity.

You need the lasting vitality that Firestone material and building insure. A Firestone Tube does not deteriorate on dealer's shelf or in your reserve kit.

So don't trust to luck when you can trust to Firestone—ride in care-free confidence and with the sure economy of—

Most Miles per Dollar

Sold by Leading Dealers Everywhere.

Firestone Tire & Rubber Co., Akron, Ohio—Branches and Dealers Everywhere

"America's Largest Exclusive Tire and Rim Makers"

Pneumatic Tires, Truck Tires, Pleasure Electric Tires, Carriage Tires, Cycle Tires, Fire Apparatus Tires, Rims, Tire Accessories, etc.

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Studebaker

THE Studebaker dealer never has trouble in convincing the buyer of the value of the Studebaker SIX or the Studebaker FOUR.

Starting with the most exacting steel specifications known Studebaker never relaxes in vigilance until the 24 finishing operations have made the body of the car shining and resplendent.

Each and every part, each and every operation, has been made, or performed, in exact and scientific fashion.

And the parts have been made, and the operations performed—BY STUDEBAKER.

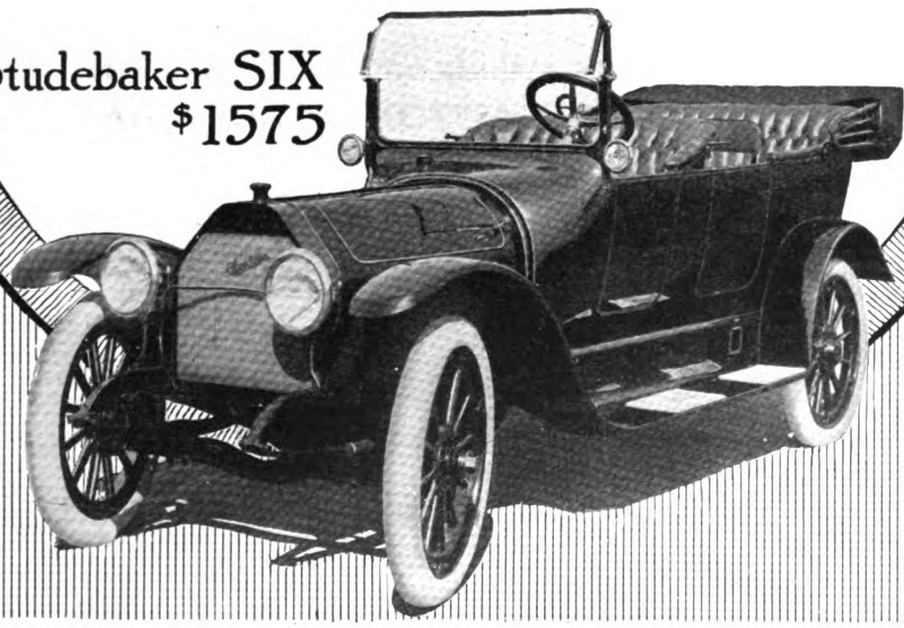
Huge quantity alone makes possible the splendid Studebaker-manufactured values at Studebaker prices.

STUDEBAKER - Detroit

F. O. B. Detroit

FOUR Touring Car	*$1050*	*SIX Touring Car*	*$1575*
FOUR Delivery Car	*1150*	*SIX Landau Roadster*	*1800*
		SIX Sedan	*$2250*

Studebaker SIX
$1575



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A Voyage of Discovery

IN THIS broad country there are many cities and towns—some are busy, some are quiet—and some neither quiet nor busy—just plain home-made towns.

In these towns there are men who buy automobiles—some are busy, some are quiet—some have gone fishing. Just plain, every day chaps.

In these towns there are also automobile dealers—some are busy—some are quiet—some are half and half—steady fellows mostly, but worrying about things that they think need correction.

In a few of these towns there are automobile manufacturers—some are busy—some are quiet—some are just paddling around.

The manufacturer who is rigged up to make twenty cars a day and selling ten deserves honest sympathy.

Here in East Moline we are making and SELLING AND DELIVERING FOUR FINE MOLINE-KNIGHT AUTOMOBILES A DAY—

The unfolding of our program is unusually interesting—follow us on the next three pages.

The Moline Automobile Company

East Moline, Illinois

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THIS is the story of an automobile that is not like any other---our way of making and marketing cars is different---you should know how we do things, because our way may be your way. If it isn't, there is no harm done.

Now just imagine that there are THREE OF US going on this Voyage of Discovery. YOU—the man who drives an automobile—who loves a good car as he loves a good horse, the MAN-MOTORIST who knows there can be a Spirit in a piece of machinery—who humanizes his motor car as the locomotive engineer humanizes his great engine and who calls it by name as he speeds on and on in the silent hours of the night when a hundred human souls are behind and the green and white signal lights wink, "All's well."

YOU—the man who drives a car with authority and responsibility, and who knows when he has a real machine under him—YOU ARE NUMBER ONE in our gathering—the first man to say, "I WILL GO ALONG ON THE VOYAGE OF DISCOVERY."

Next—YOU—MR. DEALER—A man of sound, sober business sense and judgment, who rubs his eyes in bewilderment at the unbalanced merchandising methods that have come to worry and harass a great industry.

You, Mr. Dealer, who says to himself almost every day:

"When are we going to get to an even keel in this automobile industry?"—for you are realizing without us telling you that the clock has struck twelve for a new and better basis in selling the product of a great industry.

Have you ever considered what would happen to the dry goods merchant if every other woman who bought a coat in the fall of 1913 came back this year and said:

"Mr. Jones, I paid you $60 for this perfectly good coat last year. Now if you will allow me $35 for it this year I will buy a new one. It is in very good condition and I really haven't worn it more than 1000 miles." Substitute automobile for coat in the conversation. Now—where do we get off?

You see the point, Mr. Dealer—won't you go along with us on the VOYAGE OF DISCOVERY—and see what you can find out?

Now WE will go along—and FOR US speaks a man who was a builder of engines to CUT WOOD, to DRAW WATER, to CREATE POWER—long before a self-propelled wagon was dreamed of as a commercial possibility—and he and his men were building fine, powerful, efficient stationary engines—and they are building them today.

We claim the right to lead the way because we were not born into the automobile business by accident—by promoters or by any other process except the natural and proper evolution of the engineering experience, knowledge and habit, all of which we logically transferred to our Moline-Knight automobile business.

These are OUR CREDENTIALS as makers of automobiles and our warrant for inviting YOU, Mr. Man WHO DRIVES A CAR, and YOU, MR. DEALER, WHO SELLS THE CAR, to travel with us.

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How Shall We Journey and Where Shall We Go?

Our Moline-Knight is at the door—jump in, Man-Motorist, and take the wheel—and you, Mr. Dealer, come into the tonneau and we will ride with you. The car starts without jar or crack—it moves—a soft, sweet purr that indicates perfect unison of moving parts and balanced engineering, the fascination of the silent, positive, powerful impulse of the Moline-Knight engine brings a smile to Man-Motorist. We are now on a straight road, he lets her out—40-42-48-50-54-60 miles shows on the dial of the Warner.

For the first time he speaks, "GEE, WHAT AN ENGINE," he says, and then he lays down to real work—WE grip our hats, the grit bites our faces, the trees fly by like the telegraph poles when you glance back out of the window of the Twentieth Century.

We call, "Slow down a little," and he smiles, pulls her down to 50-45-40-35-20 miles and the engine still purrs, sweetly, softly and the Moline-Knight rolls on.

WHAT SAY YOU, MR. DEALER?—You have driven dozens of cars—you have ridden in the Great Packard—the Powerful Pierce-Arrow and almost every other good car—

What do YOU think of the Moline-Knight?

As he looks out over the fields the thoughts that run through his mind are, "These men have a wonderful machine. I wonder if they know it?" And dealer-like he says nothing, but he looks about in the car, he notes the shape of the stream line car body, the graceful beauty. He has tested the riding qualities, he notes the trim, the fittings, the elegant finish—the comfortable upholstery. He makes a suggestion here and there, details of refinement, but the power, the silence, the pull of that engine dominates him.

Then he says (because he is a dealer), "What's the price and the dealer's discount?" and we tell him.

Then he asks, "Do you think I could sell this car; I'm in a country town—not many people to buy a fine car?"

In every town there are the bankers, the lawyers, the merchants, the doctor, the manufacturers—a splendid group of upstanding, moderately wealthy or well-to-do men of the type of Man-Motorist who is driving—"There are more prospects than you imagine."

"How many Moline-Knight cars would I have to take to start selling this car?"

"Not many—we would rather sell you three than six to start with if three is the safest number for you to buy."

And Man-Automobilist drives on and when he draws up in front of the starting place he alights and puts his hand on the radiator. He finds it cool—he opens the bonnet—and looks with a critical eye at every part and bearing.

"Fine car," he says. "You gentlemen have the kind of an automobile that is going to stay on the map. It's the goods."

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We have 1,200 cars of this type to market in 12 mos. They WILL be marketed.

Four cars every business day—not a tremendously big job—but we want to make a FINE JOB OF IT—and we want these cars to be sold right.

The Moline-Knight is an automobile that a group of real automobile dealers may sell and in the selling add a real asset to their business.

The Moline-Knight has the engine that under the watchful eye of the engineering experts of the Automobile Club of America ran 338 hours continuously—2 weeks, day and night—averaging 38 horse power—ending up with 53 horse power at 1682 revolutions a minute—14,700 miles at 45 miles an hour.

We could not have built such an engine had we not been engine builders.

This corporation is committed to the policy of building carefully—scientifically—accurately—

That is why we make only four cars a day.

The buyer gets this magnificent 5-passenger, four-cylinder car for $2400.

The price means nothing—it might be $10,000 and the car no better.

And just one more thought before we put it up to you, Mr. Dealer.

Not for the purpose of selling the four cars per day, that we will make the balance of this year—but as a business insurance—as a wise precaution to help YOU sell our increased production in 1915—watch for our advertisements in the big national magazines such as the Saturday Evening Post, Collier's, Literary Digest, Life.

You will find these leading publications in the homes in YOUR town—they are read by the prospects on YOUR MAILING LIST—they reach the men YOU WANT TO SELL.

We have more to tell you. Write us. Let us know if you want to sell a car in a SPECIAL CLASS. Prove to us you are one of those SPECIAL CLASS men, for the Moline-Knight is a special class car.

The Voyage of Discovery is not finished—there is more to tell you. Today is a good day to say to us—"Your proposition interests me."

Moline Automobile Company

East Moline, Illinois

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You Can Depend Upon The Dewey

It's the best power Tire Pump for the accessory dealer, because it is sold **complete** and fully guaranteed, at a lower price than is asked for pumps alone which compare with it in efficiency.

The Dewey Power Tire Pump ($10) "No Extras"

It lacks nothing a high grade power tire pump should have. Attaches at spark plug opening. Adapters furnished for all cars and self-opening connections to fit any tire. Has 12 feet of special strength, fabric-protected hose and a high grade pressure gauge.

The Dewey pumps chemically pure air only, taken from around the pump barrel. No gaseous vapor from the cylinder can reach your inner tubes.

It can't spray oil because this is the pump that is never oiled.

If you haven't the Dewey in stock, order today from your jobber. Get the benefit of our continuous national advertising which has made the Dewey the best known power tire pump in this country.

THE DEWEY-ANDERSON MFG. CO.

462 Woodruff Ave.
Toledo, Ohio



75% of all tire trouble is due to under inflation

THERE is no method yet discovered of ascertaining the pressure in the inside of a tire, except by the use of a pressure gauge. A casing containing 40 pounds of air looks and feels exactly like a casing containing 80 pounds. If your tires require 80 pounds and you only give them 40, they're on the quick road to the scrap-heap.

USE A

SCHRADER

Universal Tire Pressure Gauge

and Save Your Tires

Price, $1.00

For Sale by

A. SCHRADER'S SON, Inc.

783-791 Atlantic Ave., Brooklyn, N. Y.



Pyrene TRADE MARK
FIRE EXTINGUISHER

Is the One Sign of Safety that Distinguishes Your Car

A correspondent of the "New York Sun" knows how to pulverize an axiom by a sentence. Read what he says:

"SAFETY FIRST!

Five Die Under Burning Car

Girl's Arm Burned Off"

"At Lynchburg, Va., a gasoline tank on an automobile driven by Ray Vaughan exploded scattering gasoline over Vaughan and Mrs. C. W. Perrow, the other occupant of the car. Vaughan died screaming for help and Mrs. Perrow later succumbed to her burns in a local hospital."

"The same evening at Kearny, N. J., Samuel Willis, a prominent city business man, his 18 year old son Walter, and Mrs. John Walsh, wife of a Jersey City lawyer, were pinned beneath an overturned auto and literally roasted alive, while Mr. Walsh and Mrs. Willis were helpless witnesses to their frightful fate. Eileen Willis, five years old, was held fast until her left arm was burned off."

"Why do we print such horrible accidents and in the same breath advertise: 'SAFETY FIRST.'"

Why not drive home the absolute necessity of fire protection for the automobile—DRIVE IT HOME TO THE OWNER AND DRIVE IT HOME TO THE MANUFACTURER.

Drive it home frequently and fearlessly—and help make motoring SAFE.

All leading insurance Companies allow 15% Reduction on insurance premiums of Pyrene-equipped motor cars, which reduction was originated by the Aetna Accident and Liability Co. and the Automobile Insurance Co. of Hartford, Conn.

Ask that your new car be Pyrene-equipped at the factory.

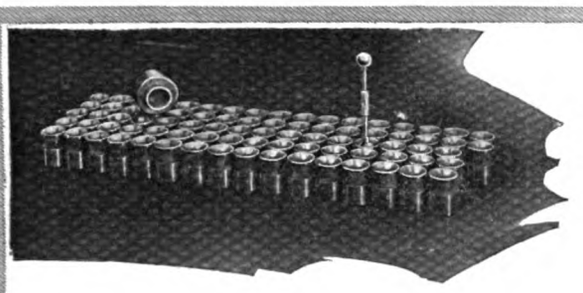
AT ALL FIRST CLASS SUPPLY DEALERS

Brass and Nickel-Plated Pyrene Fire Extinguishers are the only one-quart Fire extinguishers included in the lists of approved Fire appliances issued by the National Board of Fire Underwriters.

Pyrene Manufacturing Co., 1358 Broadway, NewYork

OFFICES IN ALL PRINCIPAL CITIES

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BUILT without valves or springs or cams the Zenith has no variables. With its compound nozzle and extreme simplicity it can be forgotten when once set correctly. Fool proof and trouble proof—lasting forever—the Zenith is by far the wisest buy in the field of carburetion. Ask for a catalog and get posted.

Fitting Air to Close Limits

EVEN air is measured and held to a standard in building the famous Zenith. The venturi tube or air nozzle is important for through it must pass the demands of the motor.

These nozzles are quickly tested by the ball gauge. One end of the gauge says "Go" and the other end "No Go"—a difference of but plus or minus 2000ths of an inch. The "Go" end must slip through the nozzle; the "No Go" end must not. Thus even the air which passes through the Zenith must conform to limits. The results obtained from each Zenith are identical. There is no element of chance. All is known.

ZENITH CARBURETOR CO. DETROIT, MICH.



HANDLE YOUR ACCOUNTS AND RECORDS

The New and Easy Way

In the past eleven years more than 100,000 merchants in many different leading lines of business discarded the old bookkeeping methods and installed the **NEW** and **EASY WAY** of handling accounts and reports.

The following is a list in part of some of the different lines:

Gen'l Merchant	*Provision*	*Dairy*	*Garage*
Hardware	*Laundry*	*Tailoring*	*Book Store*
Drug	*Contractor (Time*	*Confectioner*	*Electric Goods*
Commissary	*and Stock Keeping)*	*Plumber*	*Flour and Grist*
Dry Goods	*Coal, Ice and Transfer*	*Shoe*	*Mill*
Lumber	*Jeweler*	*Music*	*Wall Paper and*
Furniture	*Manufacturer (Stock Keeping & Inventory)*		*Paint*



THIS NEW STYLE EXPANSION REGISTER contains a minimum of 220 regular accounts and can be expanded to a maximum of 860 regular accounts. Expansion possibilities 640 accounts. Built and finished to suit your business.

With Only One Writing **The McCASKEY SYSTEM** The End of Drudgery

First and still the best!

is the **NEW** and **EASY WAY** and can be fitted to your business, large or small.

Let us explain what the McCASKEY SYSTEM will do for you. The information we can give will be worth real money.



Don't delay, but write to **THE McCASKEY REGISTER CO., Alliance, Ohio**

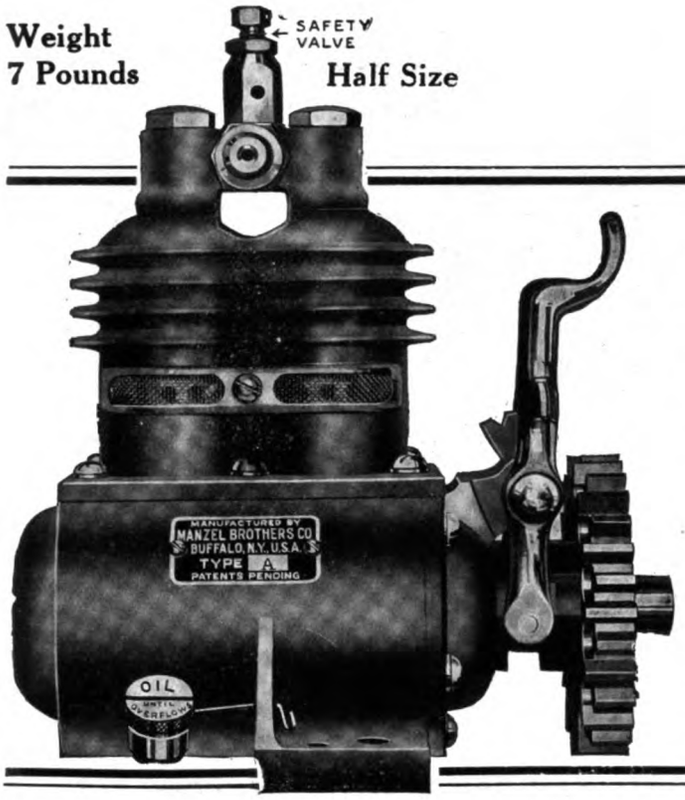
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Weight
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Half Size

MANZEL
ENGINE DRIVEN TIRE PUMP

Every Motor Car Owner

in the United States (except owners of the most modernly equipped cars) is **ready** to hear about a Power Driven Tire Pump. Now that the Power Pump is to be had, he wants more than ever to get rid of hand pumping on the road. He is keen on a really good Power Pump, at a reasonable price, that will do away with this annoyance.

The MANZEL Engine Driven Tire Pump

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Haven't you some customers owning the following cars that would be interested?

Abbott-Detroit	Cartercar	Michigan	Rambler
Buick	Chalmers	Mitchell	Reo
Cadillac	Hudson	Oakland	Speedwell
Case	Howard	Overland	Studebaker
Cole	Kissel Kar	Packard	Stutz
	Maxwell	Paige-Detroit	

We are preparing to fit other cars as well.
There is no better Power Tire Pump on the market. It will inflate the largest tire in two or three minutes. Write us to-day for dealer prices.

MANZEL BROS. COMPANY, 333 Babcock St., Buffalo, N. Y.

New Departure Ball Bearings



A Fair Question Deserves a Fair Reply

In designing your next car, the question of bearing equipment will, of course, receive the serious consideration so important a question deserves.

In all fairness, New Departure ball bearings more than answer that question.

It is a bearing of guaranteed quality including high grade materials, accuracy of finish, and uniformity of dimension. It is the product of an American factory with ample capacity for prompt and complete deliveries without liability of troublesome delays such as are sometimes experienced by manufacturers who buy their bearings abroad.

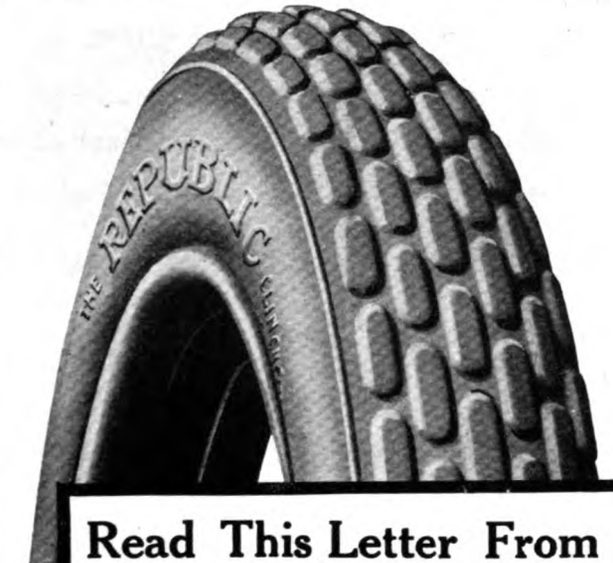
Why not give New Departures a thorough tryout?

A line from you will bring our literature and representative. May we send either or both and inform you fully of our proposition?

The New Departure Manufacturing Co., Bristol, Conn.

Western Branch, 1016-17 Ford Building, Detroit, Mich.

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Read This Letter From a Republic Customer!

A few days ago we received the following letter from a Chicago motorist (name on request):

"When I was to see you about a year ago, you told me that Republic Tires were good tires, and I immediately put on a set, and they are still giving service. So I feel that my call on you at that time was not in vain, owing to the fact that I have had 1,500 more miles on your tires at the present time than any other make I have used since 1909."

It Pays to Sell Republics

because they make good every claim made for them, as in the case of the man quoted above, because they are Quality Tires, not built to fit a price, but priced to fit the Best Tire Built. Write us for our proposition.

REPUBLIC MILEAGE

PLAIN AND STAGGARD TREAD

TIRES

Branches and Agencies in all the Principal Cities



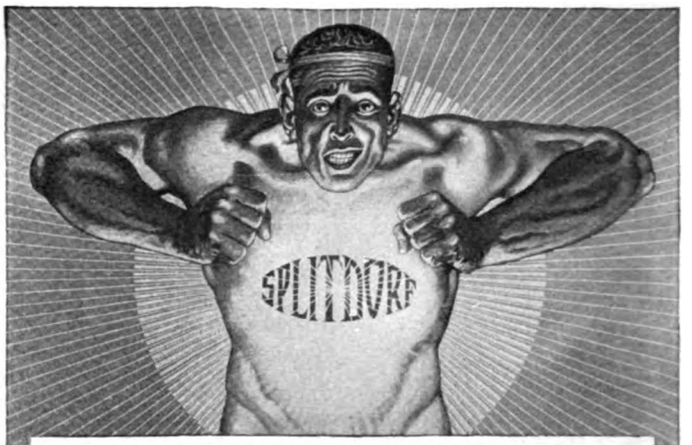
The W M Tread Tire will enable you to go after light car business with the knowledge that your customers will get service and mileage far beyond their expectation.

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30 X 3	$13.50
30 X 3 1-2	$18 00
32 X 3 1-2	$19.50

Republic WM Tread Tires

Republic Staggard Tread, Pat. Sept. 15-22, 1908.



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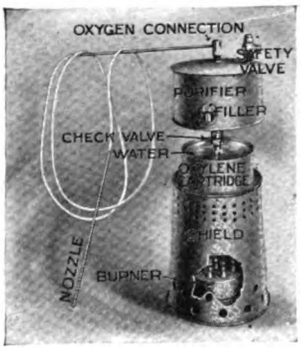
We'll exchange your present magneto of any make on a liberal allowance basis for an up-to-the-minute SPLITDORF low or high tension.

SPLITDORF PLUGS are not experimental—they are standard. Known since their first appearance as the "common sense plug" they are exactly that—no more and no less. SPLITDORF PLUGS will outlast your motor—thousands are rarely removed from a cylinder head. There is nothing fanciful about them—they are made to endure any and every strain of ignition put upon them.

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ADJUSTABLE TO ANY LOAD



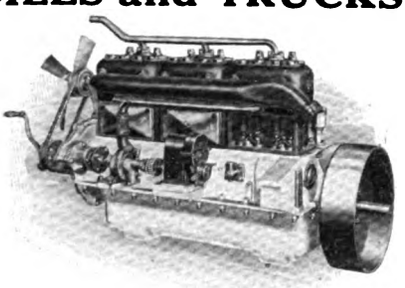
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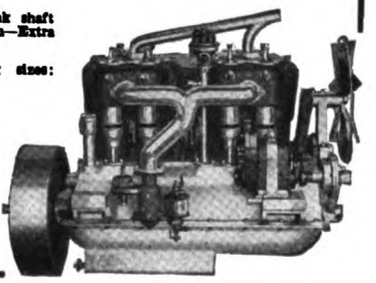
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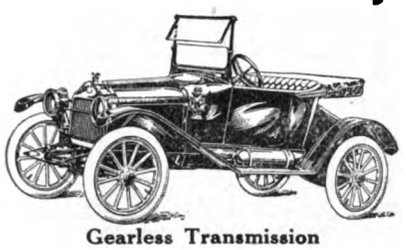
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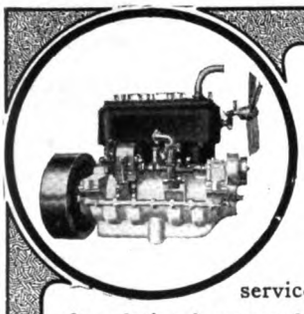
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We build them in several models. Also hoods, seats, tanks and fenders.

AUTO SHEET METAL WORKS
1530 S. MICHIGAN AVE., CHICAGO, ILL.

I'll Save You Money on Tires

Dollars saved on every size. Signed guarantee of 3500 miles with every tire. I'll show you how to make dollars on your old tires, too. Don't buy another tire until you get my illustrated price list. Write me today. It will pay you. State size, I have an Excellent Agents Proposition.

J. A. McMANUS
Manager Peerless Tire Co.
204 E. 54th Street, West New York City

PATENTS SECURED EVERYWHERE

My aim is to honestly advise and faithfully serve my clients. Incorporation papers prepared.

F. V. WINTERS, Patent Lawyer
128 East 23d St., New York City, N. Y.

TOOL KITS

Special sale of complete tool kits. Why pay $5.00 when you can get a standard kit complete for $1.09.

PURITAN MACHINE COMPANY, Detroit, Mich.
All Parts—All Cars

I WILL SELL YOU CLINCHER

or straight side tires, either firsts or seconds, cheaper than any one in the United States.

D. OGDEN, Columbus, Ind.

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SOOTLESS SPARK PLUGS

Have records of a set used 6 years—a set used 48,000 miles.

Manufactured by

The OAKES & DOW CO.
BOSTON, MASS.

Booth FELT

TRADE MARK

Washers, Gaskets, Packings and automobile felt goods are made in a factory specially equipped for automobile requirements.

N. E. BOOTH, 642, 644 Pacific Street, Brooklyn, N. Y.

GOODYEAR
AKRON, OHIO

This name on Automobile Tires and Rubber Accessories signifies inherent qualities of material and workmanship that insure the maximum of service at the minimum of expense.

THE GOODYEAR TIRE & RUBBER CO.
AKRON, OHIO

(673)

What the Moore Multiple Exhaust System means to You.

By this system, exclusively our own, you gain 22.8 per cent more power with the same amount of fuel. Great economy and more power when you want it. No back pressures in the exhaust manifold. The clean incoming gas is undiluted.

THE LEXINGTON-HOWARD COMPANY
126 Main Street, Connersville, Ind., U. S. A.

For anything in sheet metal that goes onto an automobile ask the

HAYES MANUFACTURING COMPANY

DETROIT, MICHIGAN

Largest Users of Sheet Metal in the World

Pressed Steel Frames for Pleasure Cars and Trucks

Rear Axle Housings

Heavy Stampings

Forgings

A. O. Smith Company
MILWAUKEE

STUTZ

Official Road Race Champion

The success of Stutz racing cars in contests means greater power and stronger parts in the vital places guaranteeing longer life and better service on the road. *Write for literature.*

Stutz Motor Car Company, Indianapolis

HESS AUTOMOBILE AXLES

Your Car as Good as Its Axles
Hess Axles Make a Good Car
Enough Said

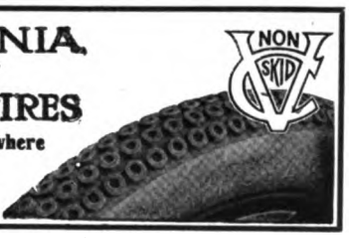
HESS SPRING & AXLE COMPANY, Cincinnati, Ohio

PENNSYLVANIA Oilproof VACUUM CUP TIRES

NON SKID

Making Their Mark Everywhere

Pennsylvania Rubber Company
Jeannette, Penn.



ONE-HAND TOP

SHARRER

TOP MAKERS don't overlook the "Sharrer One Hand Top" agency

Be prepared for the Spring rush, write quick.

SHARRER PATENT TOP CO. Inc.
247 West 55th Street New York

ERE-LONG YOU'LL USE

LONG

Cellular—Honeycomb—Spiral Tube Cooling Systems for Pleasure Cars — Trucks — Tractors.

Write to LONG MANUFACTURING COMPANY, Detroit, U. S. A.

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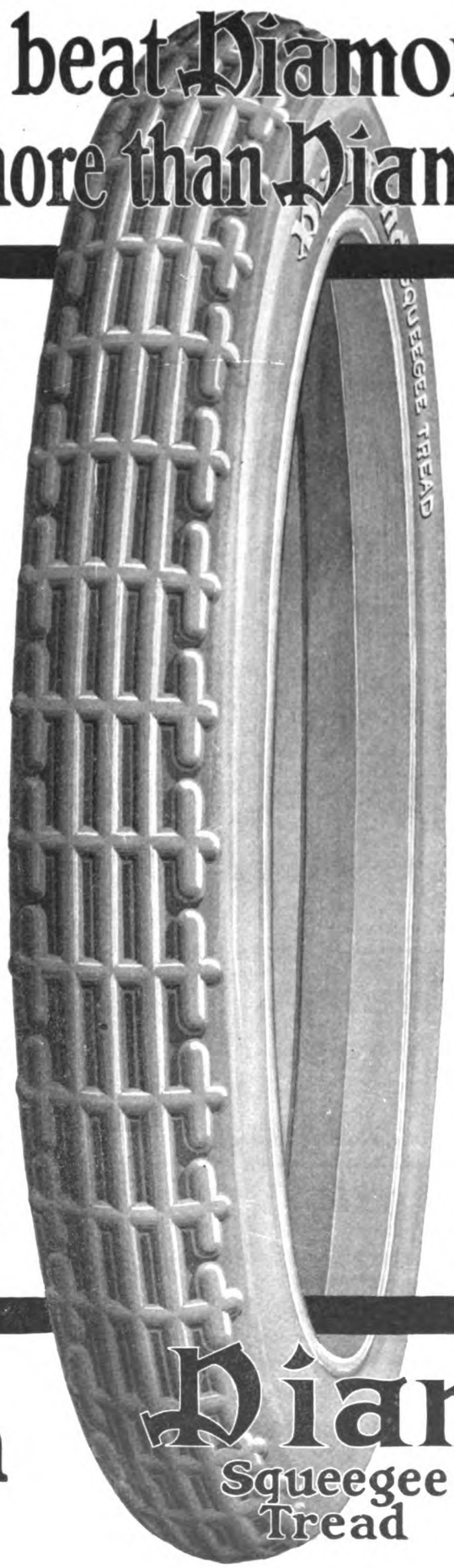
You can't beat Diamond Quality—Why pay more than Diamond prices

With Diamond Quality Selling at these prices you'll do the greatest volume of profitable business.

Size	Squeegee Tread Prices
30 x 3	$12.65
30 x 3½	17.00
32 x 3½	18.10
33 x 4	25.25
34 x 4	26.05
34 x 4½	35.00
35 x 4½	36.05
36 x 4½	37.10
37 x 5	44.45
38 x 5½	57.30

Your customers get more for their tire money than they have ever bought before—lower first cost, lower cost per mile and per tire. You know the quality of Diamond Tires—

you know their reputation of 17 years' standing. Never in our history have we built better tires than those we offer at the above prices.



For Quality Certainty

—the services that makes purchasers come back for Diamond Tires and makes them tell their friends—

For Mileage Certainty

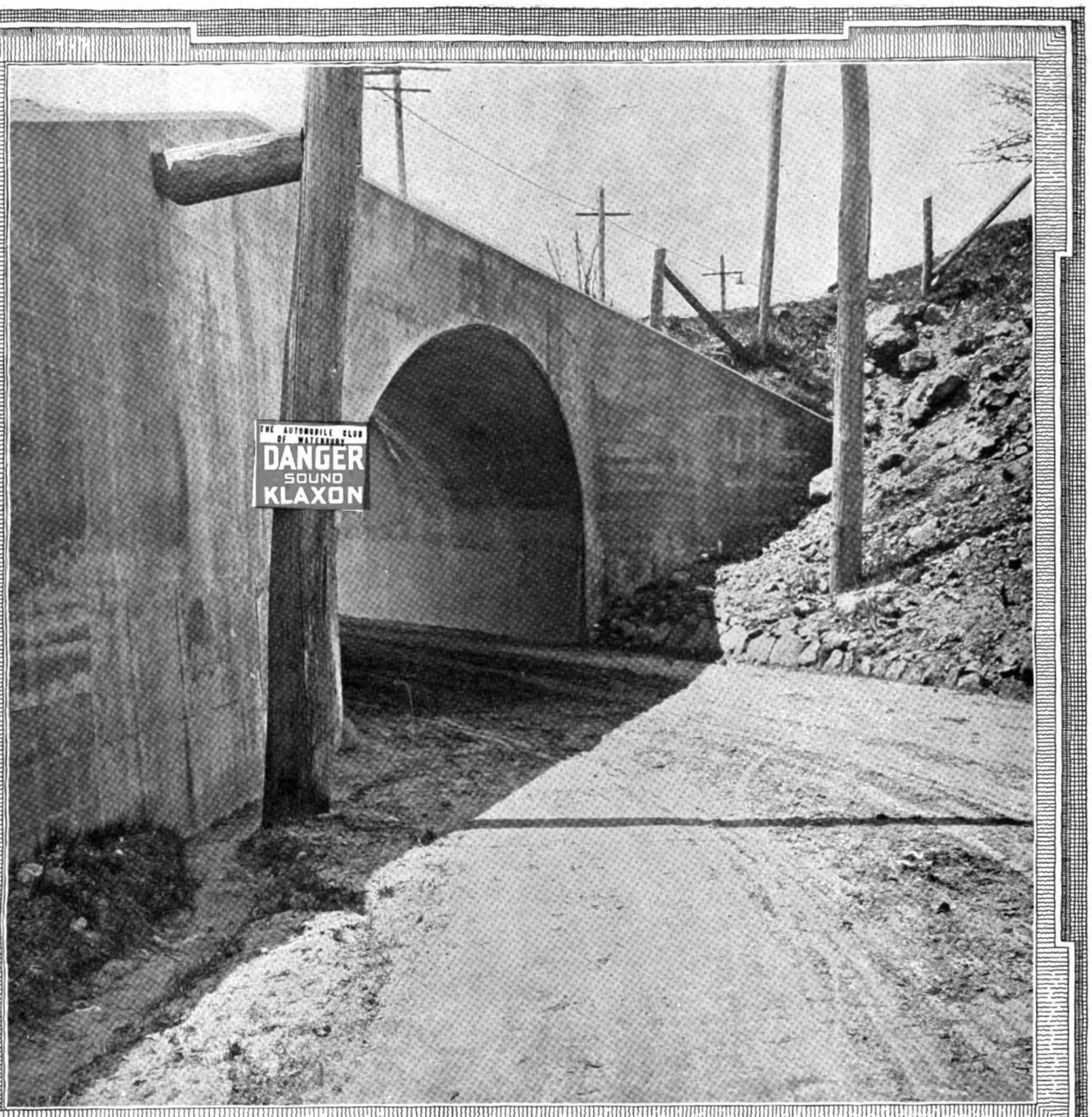
—longer mileage and every mile a smoother mile—in the scientific, wear-resisting Squeegee Tread structure—

For Non-Skid Certainty

—the Squeegees wipe their way through the slipperiest surface to a firm grip on the pavement. Defense against long skid and short mileage.

Push Diamond Squeegee Tread Tires

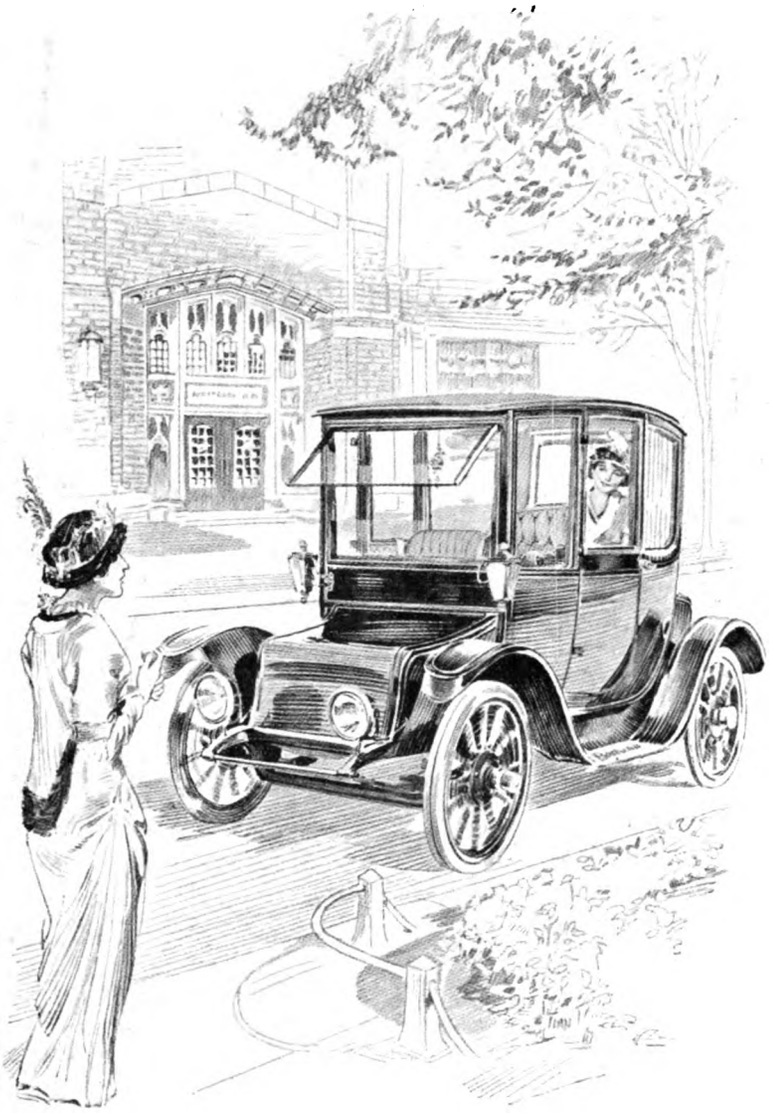
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STATE LAWS require that motor cars carry "suitable" or "adequate" signals. ¶ Can you imagine a "honk" or a "buzzer" horn *suitable* or *adequate*—as required by law—in a Klaxon situation like this?

This advertisement planned, written and set up entirely in the Klaxon Factory. Type composition by the Klaxon Press with "Klaxon" type especially designed by Goudy

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$2550

Borland Model Fifty; 4-Passenger, Front or Rear Drive Brougham; Lever-Steer; Hand Speed-Control; 40-Cell, 11-Plate Exide Batteries; 34 x 4 Cushion or Pneumatic Tires; 96-in. Wheel-Base

THE COMPLETE LINE

Model	Type	Pass.	Drive	Price
Argo B	Roadster	Four		$2350
A	Coupe	Four	Rear	2650
C	Coupe	Five	Forward	2800
Borland 52	Roadster	Two		2250
45	Coupe	Four	Rear	2400
50	Brougham	Four	Forward	2600
50	Brougham	Four	Rear	2550
60	Limousine	Seven	Outside	5500
Broc 28	Brougham	Four	Rear	2900
29	Brougham	Four	Rear	2950
31	Brougham	Four	Forward	2950
33	Brougham	Five	Rear	3100
34	Brougham	Five	Forward	3150
36	Brougham	Five	Double	3200

All Argo Models, Borland Roadster and Limousine, are wheel-steered. All Argo Models have foot speed-control. All Borland and Broc Models have hand speed-control.

Comparison Will Sell This Car

THE most favorable impression you can make upon the minds of your customers regarding Borland Model Fifty is to compare it with cars of other makes selling at the same price.

There is nothing lacking in Borland Model Fifty. Beauty of line, size, upholstery, riding-comfort, mileage, speed—all are embodied in maximum quantity in this luxurious, moderate-priced car.

Moreover, the dealer who sells Argo, Borland and Broc Electrics need never consider a sale lost if a customer says he prefers another type of car.

The American Electric Car dealer has a car to suit every style and service-requirement, and a range of prices to suit the purse of most every possible buyer.

Write today for the most interesting dealer-proposition ever offered on electrics.

The American Electric Car Co.

ARGO *BORLAND* *BROC*

Offices and Factory **Saginaw, Michigan**

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MOTOR WORLD

A Trade Paper Giving the World's Motor News

Volume XL
No. 2

New York, July 8, 1914

Ten cents a copy
Two dollars a year

In Modern Factories

Electric Light is Furnished by Dynamos.
Electric Power by Motors.

You are not likely to find a factory dynamo acting as a generator one minute and as a motor the next.

Reliability is paramount in large manufacturing plants. Therefore, separate electric units are used for separate purposes.

It's exactly the same with automobiles.

To be eminently satisfactory, the electric equipment should have the elements of a miniature power-house.

One separate unit for generating. One separate unit for cranking.

It might be less trouble, less expense, to combine both functions in ONE device, but—

You would prefer unquestioned efficiency, regardless of the cost question.

When it comes to maximum service, furnishing the reliability of a modern electric plant—

GRAY & DAVIS
STARTING - LIGHTING SYSTEM

Boston **Mass.**

Published Weekly by the Motor World Publishing Company, 231-241 West 39th St., New York

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There—in that package—
The SHIMS MECHANICS NEED

THE FOUR COMBINATIONS

No. 1 ASSORTMENT
Containing 1 strip each of the following:
1/32" x 2" x 9" (All. 002" Laminations)
1/16" x 2" x 9" (Half .002" Laminated and Half Solid Brass)
1/8" x 2" x 9" (Half .002" Laminated and Half Solid Brass)

No. 2 ASSORTMENT
Containing 1 strip each of the following:
1/32" x 2" x 9" (All. 003" Laminations)
1/16" x 2" x 9" (Half .003" Laminated and Half Solid Brass)
1/8" x 2" x 9" (Half .003" Laminated and Half Solid Brass)

No. 3 ASSORTMENT
Containing 3 strips of
1/32" x 2" x 9" (All .002" Laminations)

No. 4 ASSORTMENT
Containing 3 strips of
1/32" x 2" x 9" (All .003" Laminations)

All of the above are packed in standard cases of 12 packages to the case.



Perfect Shims Without Skilled Labor

Suppose you are adjusting the bearings of your car to take up wear. What would you give to be able to find at a moment's notice a perfectly fitted Shim for every bearing: a truly plane piece of metal of exact and uniform thickness, within .002 inch, for separating the cap from the pillow-block?

Wouldn't you be glad to cut out the time and labor of expertly filing down the Shim to make a true fit, and probably scraping the bearing, also? Wouldn't you be pleased to pick up off your bench, ready made, just the Shim to make a perfect job without fuss or worry?

The "Laminated" Shim

gives you just this result: perfect Shims for all repair and adjusting purposes without expenditure of time or labor.

The "LAMINATED" SHIM is a solid block composed of thin layers of brass firmly held together by a metallic binder. To make a Shim of any thickness, simply insert a knife blade and peel off enough layers to bring the strip down to the right size.

Obviously, the "LAMINATED" SHIM combines all the advantages of both the solid-block and loose-leaf Shims without any of their disadvantages. No more filing of Shims or scraping of bearings.

The "LAMINATED" SHIM is just what all machinists have been looking for.

Laminated Shim Co., Inc.
533 Canal Street **New York, U. S. A.**

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What good are all these skid-preventive devices if your brakes don't hold? And how can you depend on your brakes unless they are lined with Raybestos, the ***only*** brake lining so dependable that the manufacturers ***guarantee*** it?

If Raybestos fails to give actual wear of one full year from the date it is placed on the brakes, we will furnish new lining without charge.

Insist on Raybestos. Look for the name, on every foot, and the silver edges.

THE ROYAL EQUIPMENT COMPANY, 1379 BOSTWICK AVENUE, BRIDGEPORT, CONN.

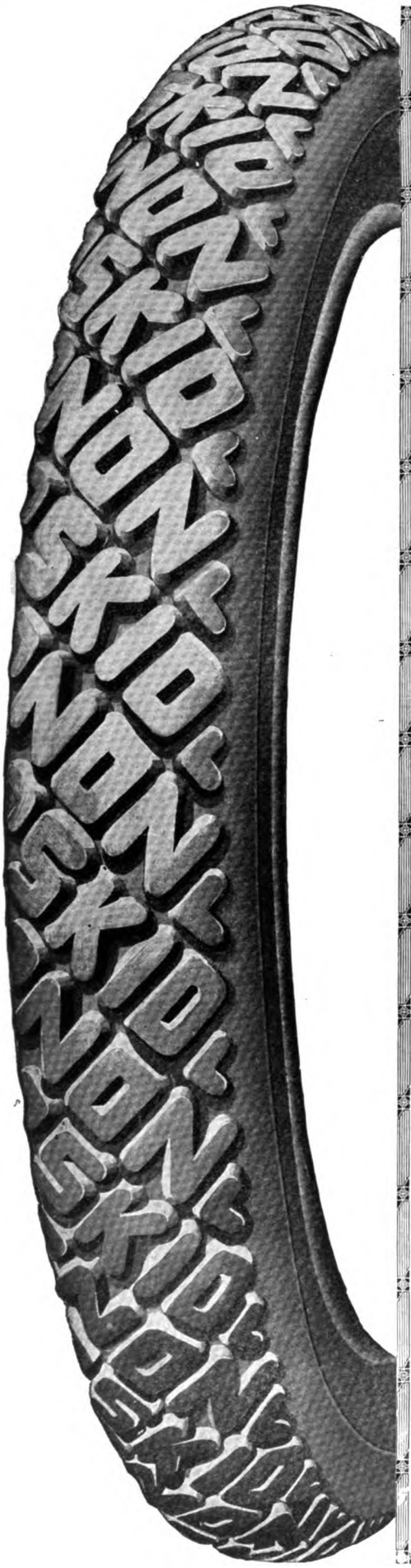
TRADE MARK

Raybestos

REG. U.S. PAT. OFF.



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From A to Z In Tire Service

The name of the Firestone Tire and Rubber Company has come to stand for everything which means precaution against mishap and delay, as well as pleasure and economy in motoring.

Not only the big factors of tire equipment but the little things are included in the Firestone idea of progressive service. And this service backs up and broadens the dealer's reputation and builds a fine repeat trade among discriminating motorists.

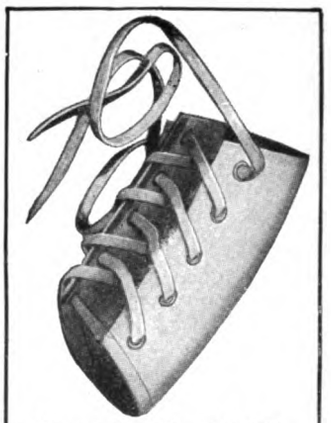
Firestone

Tires and Accessories

Firestone "Cure-Cut" keeps out moisture, prevents serious tire troubles, and lengthens tire life. It is also efficient help for small punctures in inner tubes.

Cementless Tube patches for instant roadside repairs without the use of cement. Simple in use and lasting in results.

All Firestone Accessories are designed and manufactured to the standard established 14 years ago and steadily maintained without error. As easy to sell as they are to use. Satisfactory, alike to the dealer and the man who buys. Write us for details.



Firestone Lace-On or Hook-On Boots are made of extra strong fabric—with tough rubber on tread. All sizes, 10 inches long.

Firestone Blow-Out Patches are extra strong—of proper stiffness—flaps fit around beads to hold patch in place. All sizes up to 5½ inches—10 inch or 14 inch lengths.

Firestone Tire and Rubber Co.

"America's Largest Exclusive Tire and Rim Makers"

Akron, Ohio—Branches and Dealers Everywhere

Pneumatic Tires, Truck Tires, Pleasure Electric Tires, Carriage Tires, Cycle Tires, Fire Apparatus Tires, Rims, Tire Accessories, etc.

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Put a Kelly-Springfield-Gray Tube into a tub of water and see it float. That proves that the rubber in it is real. Put a Kelly-Springfield Gray Tube on your car and see it last. That proves that the real rubber has been made into a tube by hand.



Kelly-Springfield Tire Company

Corner Broadway and 57th Street, New York

Branch Offices: New York, Chicago, Philadelphia, Boston, Seattle, Atlanta, Cincinnati, San Francisco, Los Angeles, Cleveland, St. Louis, Detroit, Akron, Ohio.

The Hearn Tire & Rubber Co., Columbus, Ohio.
Bering Tire & Rubber Co., Houston, Texas.
The Boss Rubber Company of Denver, Colorado Springs and Pueblo.
The Olmsted Company, Inc., Syracuse, N. Y.
Southern Hdwe. & Woodstock Co., Ltd., New Orleans, La.
Atkinson Tire & Supply Co., Jacksonville, Fla.
Central Rubber & Supply Co., Indianapolis, Ind.
C. D. Franke & Co., Charleston, S. C.
K. & S. Auto Tire Company, Limited, Toronto, Can.
Todd Rubber Co., New Haven, Conn.
L. J. Barth, Rochester, N. Y.
Seifert & Baine, Newark, N. J.
Barnard & Michael, Buffalo, N. Y.

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$950

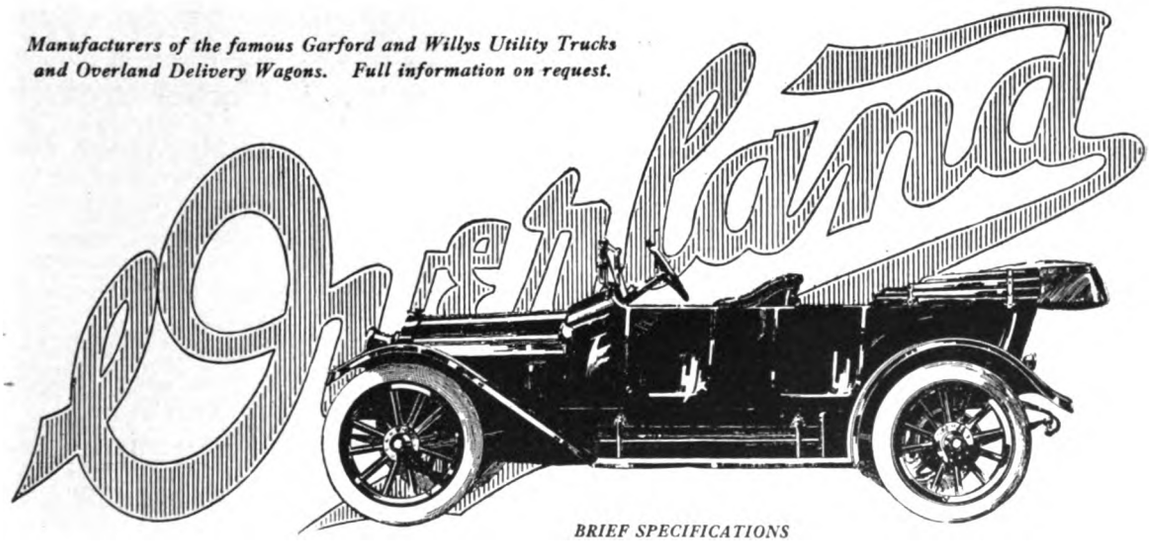
Completely equipped
$1075 with electric starter and generator. Prices f. o. b. Toledo

¶ Nearly fifty million dollars has been invested in 1914 Overlands. When the American public spend such a tremendous amount on one single car it must clearly indicate in which car you get the most value for the least money. *Buy an Overland and save money.*

Our dealer will call for you any time and give you a thorough and instructive explanation and demonstration. Handsome catalogue on request. Please address Dept. 50

The Willys-Overland Company, Toledo, Ohio

Manufacturers of the famous Garford and Willys Utility Trucks and Overland Delivery Wagons. Full information on request.



BRIEF SPECIFICATIONS

Electric head, side, tail and dash lights
Storage battery
35-horsepower motor
High-grade speedometer
Clear-vision, rain vision, windshield
Electric horn
33 x 4 Q. D. tires
114-inch wheelbase
Mohair top, curtains and boot

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MOTOR WORLD

Vol. XL New York, U. S. A., Wednesday, July 8, 1914 No. 2

GARAGEMEN VICTORS IN SEPARATOR CASE

Four Year Old Ordinance Requiring Separators Finally Repealed—Alderman Squire's Bill Substituted for It by 57 to 1 Vote.

The garagemen and dealers of New York City have won their fight against the gasolene separator ordinance. The board of aldermen at its last meeting of the summer, held yesterday, July 7, acceded to the request of four garagemen and dealers' associations in Greater New York and passed Alderman Squire's ordinance which repeals the statute placed upon the books four years ago requiring the installation of separators in garages. The final vote stood 57 for Alderman Squire's ordinance and 1 against it.

This ends four years of prosecution by the city and insistence by the municipal authorities that garages install, at high expense, a device which, when working at its best, would not prevent gasolene and oil getting into the sewers, and in a majority of instances would not operate.

At a hearing before the welfare committee, prior to the hearing of the board of aldermen, Attorney Charles Thaddeus Terry, for the garagemen, had classed the prosecution by the city as tyranny and the welfare committee was won over to the side of the motor car men, laboring in behalf of the repeal of the old ordinance.

Whether the city will endeavor to secure legislation requiring the use of some other device remains to be seen. Expert testimony introduced by the garagemen, however, was to the effect that even if gasolene and oil flowed into sewers from garages no device ever has been perfected which will stop it, and the expert said that the only device which could possibly do the work would be an acre in extent for each garage. It is asserted by the garagemen and dealers, however, and borne out by actual and accurate tests, that the amount of gasolene and oil which passes from a garage into the sewer is negligible.

Dodge Appoints Four New Managers.

Four additional district managers have been appointed by Dodge Bros., Detroit. They are C. W. Matheson, with headquarters in New York city and jurisdiction over Eastern New York state, Northern New Jersey, Eastern Pennsylvania and all of Connecticut; F. L. Jones, Philadelphia; A. C. Templeton, Minneapolis and surrounding territory; C. S. Hurst, Omaha and surrounding territory.

Matheson was the organizer and president of the Matheson Motor Car Co., Wilkes-Barre, Pa., and later was connected with the Matheson Automobile Co., New York. He also was Western manager for the Palmer & Singer Mfg. Co. and later its sales and advertising manager. Jones formerly was with S. F. Bowser & Co. and Armour & Co., Chicago. Templeton formerly was Wisconsin and Michigan manager for the Kissel company and later was with the Winton company. Hurst has traveled in Canada and more recently has been connected with the White Co. in Chicago.

Big Territory for New Aetna Distributer.

For the purpose of marketing Aetna commercial vehicles in the states of Ohio, Indiana, Illinois and for Wayne County, Mich., the Aetna Motor Truck Sales Co. has been incorporated in Detroit with a capital stock of $5,000. Frank N. Foster is president of the new concern and associated with him are Edward Kinney, secretary-treasurer; J. G. Wagner and William A. Eldred. The remaining territory of the state of Michigan is to be handled by the Michigan Aetna Sales Agency, which has temporary headquarters with the manufacturing concern.

RICKENBACKER WINS SIOUX CITY GRIND

Duesenberg Pilot Leads Home the Field at 78-Mile Clip — Wishart, Mercer, Second, 48 Seconds Later —Seven of 18 Starters Finish.

Driver and Car.	Time.
Rickenbacker, Duesenberg	3:49:02
Wishart, Mercer	3:49:50
Alley, Duesenberg	4:02:10
Patschke, Marmon	4:02:55
Anderson, Stutz	4:03:34
Knipper, Delage	4:31:07
Wilcox, Gray Fox	4:42:32
Chandler, Braender (Flagged)	126 laps
Shrunk, White (Flagged)	98 laps
Wetmore, Chalmers (Flagged)	88 laps

Sioux City, Ia., July 4—Special Telegram—Racing up into the lead at the 189th mile of the 300-mile grind on the two-mile oval here today, Eddie V. Rickenbacker, an American driver at the wheel of an American car, the Duesenberg, flashed across the wire a winner by exactly 48 seconds from Spencer Wishart at the wheel of a Mercer. All the way through the long grind, Wishart and Rickenbacker battled with only seconds separating them; but after he had passed the 189th mile post Rickenbacker was never headed.

He finished the race at the rate of 78.6 miles an hour, and in view of the fact that the course is a dirt track, his average is nothing short of remarkable. During the 300 miles the winner made only one stop for tires, losing one minute and three seconds, whereas Wishart was forced to rest by the wayside three

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times—twice for supplies and once to replace a broken valve spring.

Of the 22 cars originally entered, 17 went to the tape; of these, 7 finished and 3 were running when the flag waved.

In a way, America was avenged for the Indianapolis slaughter, for of the six foreign cars that started only one finished, and that only limped home with a cracked cylinder. No foreign drivers competed, however, Yankee pilots being at the wheels of the European speed marvels. The three Peugeots were driven by Burman, Mulford and Stringer; Grant and Babcock had the Sunbeams and Billy Knipper had the Delage.

It was a great race, free from accidents, well handled as a whole and a credit to the Sioux City motorists who staged it. Practically without experience in handling a meet of this size and importance, the Hawkeyes furnished a race that speaks volumes for the possibilities of dirt speedways; they attracted a crowd of at least 30,000 to watch the battle and financially they cleared up enough to give them an even break, it is thought, with improvements in the way of new grandstands, etc., paid for.

So encouraged are they by the results of their efforts that they have decided to have a real speedway before another year is past. They propose to either resurface the present track or let the present gumbo stay and bank the turns so they will permit of greater speed. To get the flyers they intend hanging up a $50,000 purse and to retain the same day they had this year—the national holiday. At present they are handicapped by lack of good transportation between Sioux City and the track, which is just over the state line in Union County, S. D.

The race started at 11 o'clock, but before that there were the usual preliminaries, such as the brake test, parade of drivers, etc. There had been three cars which had failed to qualify by averaging 70 miles an hour—the two Chevrolets and the Moon. The Metropol was out with a broken crankshaft and the Stafford with a broken crankcase. The drawing for positions resulted in the cars that did qualify lining up in rows of three each in the following order: Anderson, Stutz; Burman, Peugeot; Mason, Mason; Knipper, Delage; Shrunk, White; Wishart, Mercer; Oldfield, Stutz; Patschke, Marmon; Stringer, Pepgeot; Mulford, Peugeot; Wilcox, Gray Fox; Grant, Sunbeam; Rickenbacker, Duesenberg; Alley, Duesenberg, and Babcock, Sunbeam. In the last row were Wetmore, Chalmers, and Chandler, Braender Bulldog.

(Continued on page 34.)

COOPER, HUGHES, PARSONS WINNERS AT TACOMA MEET

Cooper Takes Montamarathon in a Stutz, Hughes the Potlatch in a Maxwell and Parsons the Intercity in a Frantz.

INTERCITY TROPHY RACE—100 MILES

Driver and Car.	Time.	M.P.H.
Parsons, Frantz	1:21:29⅘	73.6
Brock, Ray	1:31:22⅘	65.72
Latta, Lozier	1:32:33⅕	64.8
Staley, Studebaker	1:39:37⅘	60.23
Croston, Chevrolet	———	——
Smyley, Hupmobile	———	——

Thomas, Mercer, out 34th lap, burned bearing
Barnes, Romano, out 31st lap, broken air line
Terrien, P. C. Special, out 13th lap, engine trouble
Schneider, Hudson, out 9th lap, broken crankcase
McGoldrick, National, out 7th lap, burned clutch

POTLATCH TROPHY RACE—200 MILES

Driver and Car.	Time.	M.P.H.
Hughes, Maxwell	2:41:32⅘	74.2b
Klein, King	2:41:36⅘	74.25
Cooper, Stutz	2:44:01⅗	73.26
Dingley, Ono	2:50:13⅘	71.81
Ruckstall, Mercer	———	——
Parsons, Frantz	———	——

De Alene, Marmon, out 73rd lap, car wrecked
Kennedy, Chalmers, out 33rd lap, broken spring hanger
Pullen, Mercer, out 24th lap, broken rear axle shaft
Tetzlaff, Maxwell, out 17th lap, broken valve spring
Brock, Ray, out 11th lap, bent rear axle
Carlson, Maxwell, out, engine trouble
Verbeck, Fiat, out, engine trouble
Welch, Italia, out, two cracked cylinders

MONTAMARATHON TROPHY RACE—250 MILES

Driver and Car.	Time.	M.P.H.
Cooper, Stutz	3:24:34⅘	73.44
Ruckstall, Mercer	3:32:33⅘	70.57
Klein, King	3:34:22⅕	69.89
Parsons, Frantz	3:45:20⅕	66.57
Taylor, Alco	4:17:12	64.8

Smyley, Hupmobile, running when race was called.
Dingley, Ono, out 124th lap, car overturned
Hughes-Carlson, Maxwell, out 103rd lap, broken valve spring
Tetzlaff, Maxwell, out 90th lap, broken steering gear
Brock, Ray, out 84th lap, broken frame
Pullen, Mercer, out 27th lap, broken axle shaft
Verbeck, Fiat, withdrew after 13 laps
Sorrell, Fiat, out 3rd lap, broken air line
Carlson, Maxwell, out, engine trouble

Tacoma, Wash., July 4—(Special telegram)—Earl Cooper, Hughie Hughes and Jim Parsons are wearing imaginary laurel crowns tonight and have added materially to their bank accounts as a result of victories scored in the annual Montamara Festo road races held on the new Tacoma 2-mile speedway yesterday and today.

Cooper, driving a Stutz, captured the feature event of the speed carnival, the 250-mile Montamarathon race, this afternoon, duplicating his victory of last year. Hughie Hughes, with a Maxwell, took the 200-mile race for the Golden Potlatch trophy yesterday afternoon, after a sensational struggle with Arthur Klein in a King, winning by the scant margin of 4⅘ seconds. Parsons repeated his 1913 triumph in the Intercity race, driving a Frantz car to the front in yesterday morning's 100-mile curtain raiser.

Speed fans of the northwest turned out in throngs to witness the races. Twenty thousand people were attracted to the speedway yesterday and the holiday crowd that packed the stands today numbered 35,000.

Two accidents marred the 2 days of exciting sport. In today's race, Bert Dingley, at the wheel of the Ono, and his mechanician, Swanson, were injured when, on the next to the last lap, the car plunged from the course and threw its occupants 60 feet before overturning in a ditch. Both were severely injured and it was announced tonight that Dingley is not expected to survive.

In the Potlatch trophy event of yesterday, de Alene, the Marmon driver, and his helper, Scanlon, were the victims of an accident. De Alene was leading on the 73rd lap when his car blew a tire on the back stretch and somersaulted. Both

(Continued on page 39.)

A.A.A. Abandons Transcontinental Tour.

The transcontinental tour which was to have been promoted in 1915 by the American Automobile Association has been abandoned. Action to this end was taken at the semi-annual summer meeting of the association, which was held at the Maplewood Hotel, Maplewood, N. H., on Monday, July 6. Originally it was proposed that the tour terminate somewhere within the exposition grounds at the Panama-Pacific Exposition, which will be opened in San Francisco in January next.

Instead of promoting this tour, it is now proposed to distribute accurate information with regard to hotel accommodations and routes in the form of circulars which will be sent to members of the association. At the same time, it is proposed to designate rendezvous at such places as San Francisco, Los Angeles and Seattle, where members will gather for other tours.

Governor Felker, of New Hampshire, opened the midsummer meeting and officially welcomed the members of the A. A. A. to the Granite State. State Highway Commissioners Percy Hooker, of New Hampshire, and Charles F. Gates, of Vermont, ex-Congressman Samuel L. Powers, of Massachusetts, and Paul D. Sargent, State Highway Engineer of Maine, also addressed the tourists who had gathered from 11 states.

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BROWN-LIPE-CHAPIN TAKES UP MUEHL'S DIFFERENTIAL

Secures American Manufacturing Rights From M. & S. Gear Co.—Will Continue Its Bevel Types.

The Brown-Lipe-Chapin Co., Syracuse, N. Y., has entered into an agreement with the M. & S. Gear Co., Kansas City, Mo., whereby the Syracuse company secures American manufacturing rights to the M. & S. spiral gear differential. It is the company's intention to manufacture the device in quantities for motor car and axle makers.

The device was invented by William Muehl, who constitutes the M. in the M. & S. company. The S. is L. H. Scurlock. The differential differs from the ordinary type in that power is transmitted from the master gear to the axle shaft through spiral gears. Spiral gears are anchored in a housing which is attached to the master gear. The axes of the spiral gears constitute arcs of the circumference of rotation of the housing and they engage a corresponding gear on the shaft.

The advantage claimed for this construction is that tractive effort is equalized. The car wheel which has the greater traction receives the greater power through the differential. In case one wheel is in sand or mud and does not pull and the other wheel is on solid ground, this wheel will receive sufficient power to propel the car. Dangers of skidding on slippery pavements are said to be reduced by this type of construction.

"We have sufficient confidence that this differential will do what is claimed for it to offer it to the trade," says General Manager H. W. Chapin. "Of course, we do not intend to discontinue making our regular bevel type of differential unless the trade should eventually switch to the spiral construction. We do not expect there will be more than a slight difference in the costs of the spiral and bevel types. so that should there be any additional expense it will not be prohibitive."

Billings & Spencer Get Columbia Plant.

Effectually disposing of rumors to the effect that the Sears, Roebuck Co. had purchased the Columbia plant of the old United Motor Co., the Billings & Spencer Co., Hartford, Conn., Wednesday last took over the plant, which comprises about 250,000 square feet of floor space. The real estate has been assessed at $250,000 and the machinery at $100,000. Originally the plant was erected by the Pope interests and later was taken over by the Columbia Electric Vehicle Co., which subsequently became the Electric Vehicle Co. After passing through a receiver's hands, this company was later reorganized as the Columbia Motor Car Co. and was taken over by the United States Motor Co. In due course it became the property of the Maxwell interests.

Sternberg Mfg. Now Sternberg Truck.

The better to signify the nature of its business, the Sternberg Mfg. Co., Milwaukee, Wis., manufacturer of Sternberg commercial vehicles, has changed its official title to Sternberg Motor Truck Co.

Perry Grip Ordered to Cease.

The Perry Chain Co., Lansing, Mich., which began manufacturing tire chains in 1909 and which since that date has been prosecuted in the courts by the Weed Chain Tire Grip Co., was ordered to cease operations last week by the United States Circuit Court of Appeals in Cincinnati. This court sustained the decision of the United States District Court for the Eastern District of Michigan, which held the Parsons patent No. 723,299 infringed in an action which was terminated last Fall.

The Perry company originally provided its cross chains with tension springs for the professed purpose of causing the grip to fit snugly and not creep. In 1911 this type of chain was substantially abandoned and was followed by the "Weeder." In 1912 the "Weeder" grip was enjoined, whereupon the Perry company began to market the Peerless and Emergency grips, both of the "anchored" type. The Perry company contended that the Parsons device was anticipated by the armor plate guard used on the old-style rubber tires of the Thomson traction engine about 1870. This defense was not accepted by the court, which held that Parsons was originally the inventor of the anti-skid chain.

Following the decision of the lower court a special master rendered an accounting and awarded the Weed company $17,498.50 damages. A motion for confirmation of the master's report was made and later withdrawn in the appellate court but will be made again.

The Weed company also recently secured a preliminary injunction against the Woolston Mfg. Co., Trenton, N. J., which had been making tire chains and parts.

CADILLAC TWO-SPEED AXLE BRINGS ON SUIT

Austin Charges Patent Issued March, 1914, Is Infringed—Cadillac Says It Operates Under Another.

The adoption of the two-speed rear axle by the Cadillac Motor Car Co., Detroit, has resulted in a patent suit against it by W. S. Austin, head of the Austin Automobile Co. He charges in a suit in the United States District Court in Grand Rapids, Mich., that patent number 1,091,618, issued March 31, 1914, which he holds has been infringed. In reference to the suit, Austin says:

"Cadillac became interested in my two-speed axle when it was exhibited at the Chicago automobile show in February, 1913. The company wired me to send them an axle by express and wrote requesting complete drawings showing different constructions that would be suitable for the Cadillac car. I sent them an axle and drawings, and from my correspondence and interviews with them felt assured they intended to adopt my axle and pay a suitable royalty for the use of it.

"As my patent claims were still pending, I could not give them definite reply to their request for full information as to the claims that would be allowed. They finally dropped their correspondence with me and put out a two-speed axle under their own name."

The Cadillac company, in explaining its position, states that it was approached early in the spring of 1913 by Austin with a proposition that it use his two-speed axle on one Cadillac. It was found, it is claimed, that the Austin invention, which provides one clutch on the rear axle and one on the drive shaft, was not satisfactory. A device incorporating one clutch, and that located on the drive shaft, had been patented in 1902 by Willis G. Caffrey, and this patent was purchased by the Cadillac company. "Our patent attorneys," says Henry M. Leland, president of the Cadillac company, "inform us that we do not infringe the Austin patents in any respect."

Louisville Men Buy Kentucky Wagon.

Stock in the Kentucky Wagon Mfg. Co., owned by W. C. Nones, former president, and his son, Seth M. Nones, has been purchased by a syndicate of Louisville capitalists. The price, it is understood, was better than $42 a share for

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1,200 shares, making the amount involved upward of $50,000. Although the names of those making the purchase are withheld, it is believed that R. V. Board, president, and others interested in the company who are supporting Board, are among the purchasers. The transfer removes a disagreement which had existed in the company. Nones had taken issue with the policy adopted under Board's management. Recently Nones made an unsuccessful effort to change the management. The Kentucky Wagon Mfg. Co. manufactures the Urban electric truck.

Smith to Distribute Regal in West.

The Regal Motor Car Co. has been incorporated in Minneapolis, Minn., by R. C. Smith, formerly with the Minnesota Sales Co., and A. P. Heaney, lately with the La Cross Auto Co., both of Minneapolis, with a capital stock of $25,000. The new company will act as distributers for the Regal car in Minnesota, North Dakota, the northern half of South Dakota and Western Wisconsin. The company has established headquarters at 1400 Hennepin Ave., Minneapolis.

COOPERATIVE BASIS INSURANCE PLANNED

For Pleasure Cars Only and Includes Many Forms of Loss.

A new plan of cooperative motor car insurance, restricted to owners of noncommercial cars, has been perfected by the Automobile Club of Philadelphia and the Pennsylvania Motor Federation under the name Pennsylvania Indemnity Exchange.

The forms of insurance will embrace fire, collision, theft, property damage and personal liability, the plan of operation being as follows:

Initial premiums will be based on standard rates of stock companies and a fixed portion of premiums will be set aside for all operating expenses. The balance of the premiums will go into a fund for the payment of losses, and at the end of every two weeks such losses will be pro-rated among the members in proportion to their premium payment. At conclusion of policy year each member's ledger account will be balanced and such saving as may have been effected will be returned to the members in cash or credited on the following year's premium, as members may choose. The following trustees have been appointed: John B. Stetson, Jr., Alfred R. Wiggan and M. F. Littleton, Jr.

INTERSTATE COMMISSION BARS DUNNAGE ALLOWANCE

Classes Car Blocking as Crating and Boxes—Must Pay Same Freight As Cars Blocked After July 15.

The dunnages allowances which have been allowed by practically all of the railroads in the United States have been disapproved by the Interstate Commerce Commission and after July 15 all blocking for motor cars shipped in freight cars will have to be paid for at the same rate as is charged for the shipment of the cars which are blocked.

The decision was rendered in connection with a ruling of the Southwest Tariff Committee, which represents practically all of the railroads in the Southwest. The roads originally allowed 500 pounds of blocking to be carried free of freight charges, provided the weight of the carload was above the minimum. This dunnage allowance was made on the theory that it induced shippers to use care in blocking up their cars and, therefore, was of benefit to both the railroad and the manufacturer.

The Southwestern roads cancelled their dunnage allowance several months ago and the National Automobile Chamber of Commerce protested to the Interstate Commerce Commission against the cancellation. The commission denies the chamber's petition on the ground that dunnage is in the same class as crating or boxes in which other wares are shipped and that regardless of the ultimate benefit it should be excepted. Pending the decision the cancellation had been suspended.

The dunnage allowance meant considerable to shippers of cars ranging from very light cars up to cars of the weight of Overlands and the smaller Buicks and Studebakers, which are double-decked. The blocking in shipments ranged in weight from 300 to about 1,800 pounds, the latter figure being the approximate weight of blocking required with a double-decked carload shipment.

The 500-pound dunnage allowance applies, and has applied, to shipments on flat and open cars. This question, however, was not considered by the commission and flat car dunnage for the present remains as heretofore.

Dawson's Condition Shows Ihprovement

According to the latest reports from Indianapolis, Joe Dawson, who was severely injured during the last 500-mile race on the speedway, is showing considerable improvement. He is still at the Methodist Hospital, though, despite this fact, he already has plans to drive in the next speedway race. It is understood that if he cares to do so he will be permitted to drive the same Marmon next year that he drove this year. This car is owned by Charles J. Erbstein, of Chicago.

Cyclecars Coming From Ripley, N. Y.

The Burrows Cyclecar Co., Ripley, N. Y., has placed on the market a cyclecar of the tandem type, powered with a two-cylinder V-motor rated at 13 horsepower with Atwater-Kent unisparker and Schebler carburetter. The car sells for $375. The change speed mechanism is of the friction type and provides for four speeds; final drive is by V-belts to the rear wheels. The framing is of steel-flitched ash. Wheels are of wire, with 28 x 3 Goodyear non-skid tires, and all springs are quarter elliptics. Included in the equipment are J.-M. Mobilite electric headlights, tail light, horn and set of tools.

CALLAN LAW SUPREME SAYS ALBANY JUSTICE

City Ordinance Requiring Car Stops Declared To Be Void.

All laws regulating motor vehicle traffic in other than first-class cities of New York state are void if the higher courts sustain a decision handed down by Police Court Justice Brady, of Albany, as the result of a case conducted jointly by Melvin Bender, general counsel for the New York State Automobile Association, and Roland Ford, for the Albany Automobile Club.

Brady holds that the provisions of the Callan motor vehicle law expressly prohibit authorities from passing any ordinances inconsistent with its provisions, and that the state law prohibits all cities outside of those of the first class from adopting any traffic regulations that would tend to regulate the movement of automobiles through the streets.

The city of Albany passed an ordinance requiring all motor vehicles to come to a full stop when approaching a trolley car receiving or discharging passengers. The police justice held that the state law fully covers the matter of motor cars stopping before street cars and therefore the action of the Common Council is void.

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ASK COURT TO ORDER SALE OF ALL OF POPE PROPERTY

Judge Bennett Considering Motions Made in Involved Case—Another Offer of $1,800,000 Is Tendered.

Whether the Westfield, Mass., and Hartford, Conn., plants of the Pope Mfg. Co. shall be sold together or separately is a matter which is being considered by Judge William L. Bennett, of the Superior Court in Hartford. A hearing was held on the Pope matter Thursday, July 2, at which a number of complications developed, after which Judge Bennett said he would hold the matter in abeyance.

The judge was asked to order all of the Connecticut assets of the company sold in Massachusetts in connection with the sale of the Massachusetts assets, the intention being to ask the United States District Court in Boston to order a public auction. Judge Bennett questioned his own authority as a state judge to order the sale of property located in another jurisdiction. The various attorneys, however, contended that he had this right and it was suggested that in case such an arrangement was made one-half of the proceeds should go to the Connecticut receiver and the other half to the Massachusetts receiver.

Edward E. Blodgett, of Boston, representing a majority of the creditors, who were behind the motion, said it was agreed by all that it was best to sell the Hartford and Westfield plants as going concerns if possible, or, as an alternative, that they be liquidated. He also stated that his clients were assured that if a deed for the two properties were given before September 1 a bid of $1,800,000 would be made if sold jointly at auction.

Judge Bennett, a few days previously had turned down a plan which involved the sale of the property for $1,800,000, but his refusal was based largely upon the fact that $1,400,000 of the payment was to be made in five-year notes.

Edward M. Day, counsel for members of the Pope family, said there is no connection between the Hartford and Westfield plants and that they could best be sold separately, which, he said, would offer something to the preferred stockholders, who apparently would get nothing by a joint sale.

Receiver Pope stated that of 300 cars, which he had planned to make up and sell by August 1, 233 were out of the way. Attorney Blodgett stated that it was costing $1,560 to make these cars and that they were being sold at $1,350. This was denied by Receiver Pope.

Attorney Blodgett introduced testimony to the effect that while the receiver's report showed a profit of $50,184 for the six months to April 30, no actual account of stock had been taken and that the actual figures showed a loss of about $40,000. Colonel Pope stated that 42 trucks which are nearly completed and should be out of the way by August 1 would bring in $70,000.

All plans thus far regarded as at all feasible contemplate practically an entire reimbursement of the creditors, but no plan so far has been suggested which offers much to the stockholders. There is $2,400,000 preferred stock outstanding.

Packard Truck Sales Increase 50%.

During the month of June the Packard Motor Car Co., Detroit, Mich., established a new record in truck sales. The sales amounted to $825,394, which is $256,994 greater than the sales for June, 1913, and, therefore, represents an increase of nearly 50 per cent.

BUICK PARES PRICES OF ALL ITS MODELS

Six Is Cut from $1,985 to $1,650; Fours Cut $100 Each.

Although few mechanical changes have been made in the Buick line for 1915, two four-cylinder and one six-cylinder model being retained, prices have been very considerably pared, particularly in the case of the six. Instead of $1,985, the six now lists at $1,650.

Similar reductions have been made in the prices of the fours. The smaller of the two, which heretofore sold for $1,050, now lists at $950, and the larger, which sold for $1,335, now lists at $1,235. The prices of the runabouts have been dropped $50 below those of the touring cars. The changes that have been made concern only the bodies, which have been smoothed out. These new prices are for ful equipment, including Delco electric lighting, ignition and engine starting.

Detroit Rubber Takes New Home.

The Detroit Rubber Co., which is owned by the United States Rubber Co., has taken a lease for five years of a four-story brick store at 81-83 West Jefferson avenue, Detroit. It will be entirely remodeled and entirely occupied by the rubber company.

1914 CONTEST RULES ARE ISSUED IN AMENDED FORM

Touring Regulations Revised—Class B Eliminated—Slight Change Made in Sanction Fee Provisions.

The contest rules of the American Automobile Association have been amended for the 1914 season and have been made public by Richard Kennerdell, chairman of the Contest Board. He also has prepared a digest of the principal changes from the 1913 rules. It follows:

Stock Car Rules.

The rules governing speed competitions of stock cars and stock chassis have been eliminated and a more simple method of registration of stock models for touring events has been provided. A less technical description of stock models must be filed with the Contest Board prior to any events in which the stock model is entered, and such certificate is turned over to the technical committee to check up the cars entered for competition in stock car touring events.

Classifications.

The Class "B" classification for stock chassis has been eliminated and a new subdivision has been made in the Class "A" Price Classification. Whereas formerly division 1A was for cars under $800, there are now two divisions, 1A for $450 and under and 2A for $451 to $800.

In the same way three new classifications have been added to the Class "C" Piston Displacement Classification. Whereas formerly the smallest division was for cars under 161 cubic inches, the new classifications are:

Cyclecar, Division 1C under 71 cubic inches.
Light car, Division 2C 71 to 100 cubic inches.
Small car, Division 3C 101 to 125 cubic inches.
Division 4C 126 to 160 cubic inches.

The other divisions under Classes "A" and "C" remain the same.

Sanction Fees.

Sanction fees remain the same with the exception that where heretofore events 100 miles or over on specially constructed speedways have carried a fee of $1,000 the following modifications have been made:

For specially constructed speedways:
Brick, concrete, wood, etc.
100 miles and under, per day.....$ 250
101 miles and over 1,000
Dirt and other materials.
100 miles and under, per day..... 250
101 miles and over 750
Dirt only.
100 miles and under, per day..... 250
101 miles and over 500

Where programs are composed entirely of events for cars under 125 cubic inches piston displacement or $450 in price, the Sanction fees are 50 per cent. of those regularly prescribed. Where such events constitute only a portion of the day's program, the full fees will prevail.

Crew—In all speed events 100 miles or over the crew of a car must consist of driver and mechanician, and all mechanicians must be registered in the same way as drivers have been required to register since 1910. Attractive gold pins bearing the registry number are provided for registered drivers and mechanicians.

No Intoxicants Permitted—A new rule has been incorporated strictly prohibiting the use of intoxicants in contests, under penalty of disqualification.

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Races and Hill Climbs.

No material changes have been made in these rules.

126. Direction—Road races may be run in either direction over the course, provided, however, the pits must be located on the right side of the course in the direction in which the cars are traveling.

Touring Rules.

The distinction heretofore existing between contests of six days and under and contests over six days in duration has been eliminated, and new grades for Interclub contests and Economy contests incorporated.

Grade I covers technical contests embracing preliminary and final examinations, tests of motor, clutch, gearset and brakes, with penalties for damaged or inoperative parts, lateness at controls and repairs and replacements.

Grade II imposes penalties only for lateness and work done.

Grade III imposes penalties for lateness in arrival at controls only.

Grades I and II may be conducted for stock or non-stock cars, but Grade III is open only to non-stock cars.

Sanction fees for Grade II contests have been reduced to $30 and for Grade III contests to $10.

Stock car touring events may be conducted under price classification or piston displacement classification.

Touring cars and runabout may compete together for the same prizes without reference to passenger carrying capacity.

Tire Repairs—No penalty for tire repairs and replacements and the time consumed is added to the daily running time. Extra casings and tubes may be removed from competing cars in controls for repairs. Motors may be stopped during tire repairs without penalty.

Demountable rims or wheels may be used in stock car events only where cars are regularly equipped.

The time lost on account of traffic delays occasioned by railroad crossings, congestion in city streets, open bridges, obstructed roadways, etc., will not be added to the daily running schedule, but such lost time must be made up by contesting cars.

Daily Running Schedule—An average speed of 14 miles per hour has been set for cars priced at $450 and under, the former schedules of 16, 18 and 20 miles per hour remaining applicable to cars of $451 to $800, $801 to $1600 and over $1600.

Passenger Load—All cars are required to carry at least one passenger other than the driver without regard to body equipment or carrying capacity.

Batteries.

Dry cells for ignition or lighting may be replaced without penalty, the work to be done on the car's running time.

Replacing or recharging of storage batteries where charging generator is regular equipment will be penalized.

Replacing or recharging storage batteries where no charging means are furnished will be allowed without penalty.

Fixed Penalty Schedule.

The fixed penalty schedule has been amplified to provide penalties for damaged or inoperative equipment, such as self starters, automatic gearshifts, two-speed rear axles, lighting, shock absorbers, speedometers, horns, windshields, tops and similar accessories.

The rules have been simplified and rearranged, insofar as possible, so as to afford a more ready reference.

Redden Sails For Europe.

General Sales Manager Charles F. Redden, of the Maxwell Motor Co., sailed for Europe from New York recently. After spending several days in Liverpool he will go to London and analyze the motor car situation in Great Britain.

PROMINENT MEN IN TRADE WHO ASSUME NEW DUTIES

Resignations and Promotions That Serve to Place Many Workers in New Places—Few of Them Leave the Industry.

M. E. McKenny has been placed in charge of the promotion department of the Federal Motors Truck Co., Detroit, Mich. Previously he was with the American Steel & Wire Co., the American Plow Co., Madison, Wis., and the Zender, Pacschke Frey Co., Milwaukee.

F. G. W. Sudrow, formerly with the National Battery Co., Buffalo, N. Y., the Stoddard-Dayton Motor Car Co., Dayton, O., and the Marion Motor Car Co., Marion, Ind., has become associated with the King Motor Car Co., Detroit, as Southern district manager.

A. I. Butler has been made special representative of the Batavia Rubber Co., Batavia, N. Y. Formerly he was manager of the Goodyear Tire & Rubber Co. in Brooklyn, N. Y. His territory embraces all of Northern New York.

E. E. Schwartzkopf, who recently became affiliated with Gray & Davis, Ins., Boston, Mass., has been elevated to the post of sales manager of that company.

E. W. Arbogast, who for some time has been connected with the engineering forces of the Cole Motor Car Co., Indianapolis, Ind., has been made sales manager of the Cole Motor Car Co. (St. Louis) of Missouri.

R. Ward Macey, Jr., has severed his connection with the Premier Motor Mfg. Co., Indianapolis, Ind. He retains his interest in the company as a stockholder, however.

H. W. Conrad has been appointed sales manager of the Pullman Motor Car Co., York, Pa.

A. S. Blakely has been placed in charge of the factory publicity department of the Cole Motor Car Co., Indianapolis, Ind. H. C. Bradfield, previously in charge of the department, has been promoted to field sales representative.

Lucius S. French has been appointed advertising manager of the National Motor Vehicle Co., Indianapolis, Ind., succeeding P. P. Willis, who becomes a member of the advertising staff of Thompson-Carroll-Tripp Co., Cleveland, O. Previously French was connected with the Cole and Henderson companies.

Louis E. Wagner, who is well known in the electric vehicle trade, has joined the staff of W. J. Gordon, general manager of the Century Electric Car Co. Wagner has been assigned to the building up of efficiency in the sales and service branches in the national field. He will also organize a department for assisting dealers.

Complications in Cutting Bankruptcy.

When the next hearing is held in Detroit by Referee Lee E. Joslyn in the bankruptcy of the Cutting Motor Car Co. an effort will be made to untangle complications which involve the Jackson City Bank and its cashier, N. S. Potter. Testimony has shown that approximately $50,000 of the motor car company's deposits in the bank were applied on $66,000 due the bank on Cutting notes. The creditors claim this should have been divided among the bank and other creditors on a pro rata basis.

Father of Whites Passes Away.

Thomas H. White, up to a month ago the active head of the White Sewing Machine Co., died at his home in Cleveland, O., on June 22. He is the father of Windsor T., Rollin H., Walter C. and Clarence G. White. Windsor White is president of the White Co., manufacturer of automobiles, while Walter C. White is sales manager.

753 R. C. H. Creditors Get 5 Per Cent.

Seven hundred and fifty-three creditors of the defunct R. C. H. Corp., including a number of dealers who had made deposits, have been awarded a 5 per cent. dividend upon their claims. Referee Lee E. Joslyn ordered the payment made yesterday (Tuesday).

Motor Car Securities Quotations.

	July 3, 1913. Bid	Asked	July 3, 1914. Bid	Asked
Ajax-Grieb Rubber Co., com.	155	165	200	..
Ajax-Grieb Rubber Co., pfd.	94	99	98	..
Aluminum Castings, pfd.	97	100	98	100
Chalmers Motor Co., com.	135	..	101	104
Chalmers Motor Co., pfd.	98	102	94	97
Firestone Tire & Rubber Co., com.	270	280	289	304
Firestone Tire & Rubber Co., pfd.	104	106	108½	110
Garford Co., pfd.	85	95	75	85
General Motors Co., com.	28	32	93	95
General Motors Co., pfd.	72	77	92	93
B. F. Goodrich Co., com.	27	28	23	24
B. F. Goodrich Co., pfd.	80½	92½	87½	88
Goodyear Tire & Rubber Co., com.	325	332	166	172
Goodyear Tire & Rubber Co., pfd.	97	98	96	98
Gray & Davis Inc., pfd.	..	..	98	102
International Motor Co., com.	3	6	..	3
International Motor Co., pfd.	18	25	3	9
Kelly-Springfield Tire Co., com.	..	..	56	58
Kelly-Springfield Tire Co., 1st pfd.	..	..	76	80
Kelly-Springfield Tire Co., 2nd pfd.	..	..	94	100
Lozier Motor Co., com.	15	20	..	20
Lozier Motor Co., pfd.	..	90	30	41
Maxwell Motor Co., com.	3	3½	14	15
Maxwell Motor Co., 1st pfd.	7½	9	41	42½
Maxwell Motor Co., 2nd pfd.	26½	28	17	18
Miller Rubber Co.	133	137	138	140
Packard Motor Car Co., com.	..	..	103	..
Packard Motor Co., pfd.	..	..	97	100
Peerless Motor Car Co., com.	45	50	..	17
Peerless Motor Car Co., pfd.	..	96	..	50
Pope Mfg. Co., com.	..	11	..	1
Pope Mfg. Co., pfd.	..	36	..	3
Portage Rubber Co., com.	30	40	..	30
Portage Rubber Co., pfd.	96	99	..	90
Reo Motor Truck Co.	10	11½	11½	12½
Reo Motor Car Co.	19	20½	17¾	18½
Stewart-Warner Spdr. Corp., com.	..	..	51	52
Stewart-Warner Spdr. Corp., pfd.	..	..	98	98
Studebaker Corp., com.	22½	25	29	30
Studebaker Corp., pfd.	82	87	80	84½
Swinehart Tire & Rubber Co.	85	88	85	87
U. S. Rubber Co., com.	59	59½	59	59½
U. S. Rubber Co., pfd.	102¼	103¾	102¾	103
White Co., pfd.	102	104	107	110
Willys-Overland Co., com.	56	60	88	92
Willys-Overland Co., pfd.	84	90	93	95

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Good Letters

Appearance is always a potent factor in business. The well-dressed salesman posesses a magnetism that is lacking in the slouchy type or in the gaudily-dressed example.

We all are slaves to appearance whether we are conscious of it or not. We enjoy most those dinners that are best served. We are fastidious about clean table linen, we want the soup well served, the steak well garnished, and everything in apple-pie order.

Service Makes Appetite.

It is not enough that the meat is good, that the salad is up to par, and that the desert is of a high quality. Serve these in a slovenly manner and your dinner is spoiled so far as your enjoyment is concerned. Have everything well served and it is as sunshine after rain.

But appearance goes further. These are the days of manicuring. The salesman must be clean—clean hands, clean shoes, clean collar, clean clothes.

Why all of this cleanliness?

It is characteristic of the age, and better still, a characteristic of progress, or higher civilization.

But where does good letter-writing come in?

The Criterion of Business.

The well-written letter is a magnet, the same as the well-served dinner, as the well-dressed salesman. Letters are our silent salesmen. Every time one leaves your office it is a silent advertisement, either talking in its silent manner about your good business methods or your poor ones. Every letter you send out talks. You cannot stop it.

Your business methods are judged by your office letters. Read a letter with several misspelled words in it and immediately your estimate of the sender begins to lower. Before you opened the letter the sender of it had a clean sheet so far as you were concerned. The first misspelled word brought a little doubt, the second one corroborated this and the third one was the proof conclusive.

Misspelled words are too expensive for the up-to-date business dealer or garageman. Too many of our business people are college graduates or graduates of our high schools or business institutions and know the pertinency of misspelling in correspondence. Your letters must be well written.

Magnetism of Letters.

Recently at a dinner conversation with five dealers one spoke of the value of well-appearing letters. He knew of one large industrial concern, the most successful in its line, and every letter it sent out was a masterpiece. The diction was suited to the subject, telling unmistakably that the writer was entirely conversant with his work and with the subject. It established confidence in the company.

The arrangement of the letter on the page was well carried out. It, too, carried its quiet message, one that told of an organization that had looked into every detail, and if letter writing were reduced to such an art, it was a foregone conclusion that all the other details of the business were similarly looked after; in a word, every part of the letter breathed of good business methods.

This company does not use heavily embossed stationery; it does not use gaudy letter heads; it does not use colored paper; but a plain heavy stock, with a simple type lettered head. The whole sheet is simple and gives evidence of good taste. Nothing flashy. Nothing that would create a symptom of bad business. It is business stationery.

Spacing on the Sheet.

In good letter-writing the stenographer should be taught the proper spacing of the letter on the sheet, so that it is not condensed in the top half of the sheet or extended so that there is just room for the signature on the second sheet. There is a little mathematics in spacing and arranging the letter, and it is good business for the person signing it to see that this spacing is properly done.

You acknowledge by the attention you give to personal appearance that it is worth while having your clothes clean and your appearance up to par. It is equally worth while to have your letters up to par. Be a student of letter-writing during the next three months. You will discover that a well-written letter, with the subject matter properly arranged, with the work well carried out by the stenographer and with the language employed appropriate to the subject, will be well worth while.

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Motor Underwriters Revises Its Plan and Will Be a Service Bureau

Will Place No Agents But Will Supervise Adjustments and Repairs —To List Chauffeurs and Eliminate the Reckless—Theft Recovery System Planned.

The motor car insurance business of the United States is to be centralized and systematized insofar as the adjustment of losses is concerned; data as to every chauffeur and as to car owners applying for insurance is to be compiled and classified; recovery of stolen cars is to be made the work of a nation-wide bureau, all of which are the objects of the Manufacturers' and Dealers' Motor Underwriters, Inc., in a plan which has been adopted, following alterations in its policy as announced in Motor World June 17.

Will Not Write Any Insurance.

It was originally proposed that the company represent two of the large insurance companies and make motor car dealers its agents, permitting the dealer to sell insurance and providing that repairs covered by insurance be made by the dealer in the car damaged.

Under the new plan the company will write no insurance at all, will appoint no agents, but transforms itself into a service bureau. A rule will forbid anyone connected with the company from assisting in the securing or placing of any insurance and it will act impartially toward all companies.

The Automobile Service and Inspection Bureau has been formed theoretically as a department of the business, but in reality all the company's business will be transacted by this bureau. In fact, the company name may later be relegated to the background and the name of the bureau brought forward.

It has been proposed that this service or bureau be supported by the various companies making use of it, through a subscription based on a percentage of their premium income in motor car insurance. The service rendered to a company with $1,000,000 premium income would be twice as expensive as the service rendered a company with but $500,000 premium income.

In brief, it is the purpose of the bureau to reduce the loss ratio of the insurance companies to a minimum, and it is believed that much can be accomplished in this direction.

The bureau will have correspondents in every city of any size in the United States. In the majority of instances this correspondent will be the paid secretary of the local motor car dealers' association or of the local automobile club. Through a connection with the motor car trade which has already been established, the bureau will be in touch with every dealer in the United States. This connection, together with the local correspondents, forms the basis of the field organization. The bureau will, of course, have branch offices in the larger cities, such as Boston, Philadelphia, Chicago, Detroit, San Francisco and other important centers.

Reporting on Applications.

The companies subscribing to the bureau will have the privilege of submitting to it, each day, a list of applications for insurance received by them on used and mortgaged cars whenever there is any question concerning the underwriting value of the car. In submitting this data to the bureau it will only be necessary for the insurance company to give the name of the assured, his address, the name of the car and the model.

The bureau will immediately communicate with its local correspondent and obtain a report on the assured as to all matters affecting the moral hazard of the risk. This report will be forwarded to the company together with an estimate of the insurable value of the car involved. Estimates of the insurable value of cars will be made by skilled and experienced men who can quickly tell what the probable value of the car is from its description.

As the bureau will have no knowledge of the amount of insurance applied for, a fair and unprejudiced report can be made on any particular risk either as to the moral hazard involved or the value of the car. Such a report on risks of this kind will enable the insurance company to decide whether or not they should write the risk for the amount applied for.

By moral risk is meant the risk attaching to the owner or the chauffeur; that is, whether they are reliable men, whether the business of the owner makes the risk greater, or whether information secured about either owner or driver causes apprehension on the part of the insurance company. All these will be passed upon by the bureau.

Index of Chauffeurs' Records.

For instance: A saloonkeeper bought a used car for $1,300; he paid $500 and gave an $800 mortgage. The bureau reasons thus: Saloonkeeper—has but $500 invested in the car—car probably, estimating on information at hand, isn't worth $1,300. Owner wants $1,300 insurance. It doesn't look good. Don't take it. The company for which the bureau was acting in this case would decline the application for insurance. The bureau would do all the investigating, taking this burden from all the companies in the field.

It is the purpose of the bureau to establish a card index or registration of chauffeurs throughout the United States, setting forth the record of each individual chauffeur. This, at first glance, may seem like a tremendous task, but, through the connection already established with the trade and various motor car clubs, it is believed it will be simply a matter of clerical work to obtain the names of

WHAT MOTOR UNDERWRITERS NOW PLANS TO DO.

1—Become a great insurance service bureau.
2—Write no insurance and appoint no agents.
3—Work with all insurance companies instead of merely with two.
4—Adjust losses on all cars insured, regardless of what company insures them.
5—Have all repairs made by some dealer in the car that is to be repaired.
6—Establish a Chauffeurs' Record Bureau, which will give data on every driver in the United States.
7—Eliminate the reckless driver.
8—Investigate all owners asking car insurance.
9—Operate a Theft and Recovery Bureau.
10—Pass on car insurance applications.

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all the better class chauffeurs in the United States, and this index or registration can very rapidly be built up to a high state of efficiency.

Furthermore, by letting it become known both through advertisement and through the cooperation of various chauffeurs' organizations that such a bureau of registration has been established, and that the record of the chauffeur will affect the application of his employer for insurance, all the better class chauffeurs will be anxious to have their records placed on file without delay.

Raising Standard of Chauffeurs.

The companies may submit to the bureau a list of risks with the names of the chauffeurs used, and the bureau will immediately report to the company on all those chauffeurs of whom it has record. If there be in the list the name of any chauffeur not upon the bureau's records, the local correspondent will be immediately communicated with and this record obtained.

The result of this will be a gradual elimination of the crooked and reckless chauffeur, and a raising of the standard of the entire class. Such a service, in addition to being of great benefit to the insurance companies, will be of great benefit to the assured, as he will know that the insurance company from which he buys his insurance has investigated the record of his chauffeur and has accepted the insurance only after discovering that this record is satisfactory.

Recovering Stolen Machines.

By the knowledge of risks thus acquired, including as it will the assured's reputation, circumstances surrounding any previous losses, the actual insurable value of the car and the record of the chauffeur, the most important factor in the hazard involved in motor car insurance will be rapidly changed from an "unknown quantity" to a "known quantity," and the loss ratio greatly reduced. Risks are now accepted with little or no knowledge of the hazard assumed other than the value of the car.

An important feature of the work will be the tracing and recovery of stolen cars. Having, as it will, a correspondent in every city, and being in close touch, either directly or through these local correspondents, with all dealers and garages, the bureau can spread a net-work over the entire United States which will make it extremely difficult for the motor car thief to get very far.

It is proposed that whenever a car is stolen the insurance company or its agent immediately notify the bureau through its nearest correspondent. It will be the duty of that correspondent immediately to notify every dealer, garage and police department within a sufficient radius to locate the car quickly. With a system of this kind it would be impossible for the car thief to enter any city or any garage or local dealer's place of business. He would be picked up within a few hours after the bureau or its local correspondent has received notification of the theft.

In the recovery of a stolen car the company would necessarily pay all expenses incurred in securing its return after it has been located by the bureau.

As soon as the car is located the company will be notified, and may, itself, take such action as may be necessary to obtain the car; or its return will be undertaken by the bureau at the company's request.

Solving the Problem of Repairs.

One of the greatest difficulties which the various insurance companies writing motor car insurance have encountered is the making of proper adjustments in the event of partial loss, where the adjustment takes the form of repair of the damaged car. It is a well established fact that the best man to repair a damaged car is the manufacturer who made it or his duly authorized representative who sold it. The manufacturer or dealer knows his own make of car better than any outside repairman. He is better equipped, by far, than any one else to put a car in satisfactory condition. Every car owner appreciates this and is inclined to insist that repairs on his car be made by the manufacturer or dealer.

Insurance companies, as a rule, have objected to being bound by any agreement to return a damaged car to the manufacturer or dealer, and have insisted that it is their right to get a number of bids on any repair job and to give it to the lowest bidder. This has often resulted in dissatisfaction on the part of the assured, even though the repairman be extremely efficient. The insurance companies, they state, have felt that some manufacturers and dealers have been inclined to be very unfair in their charges for repair parts and repair work, and that they were in need of some adequate protection against excessive bills.

In this connection the bureau can render a great service. It can make it possible for all the subscribing insurance companies to make adjustments in the event of partial loss in any place in the United States, by having the car repaired by the nearest dealer in that make of car if he is equipped to handle the repairs and, at the same time, be assured that the repair bill will be legitimate.

The bureau will have intimate connection with the entire motor car trade and through this connection will be able to control all adjustments made in this way. If, for example, a car is damaged in a city like Syracuse, the bureau will be in a position to recommend the best place to have repairs made. In most instances this will be the dealer who sold the car.

Adjusters Not To Be Supplanted.

By having a connection with the manufacturer of that car, the bureau will be able to assure the insurance company that it will receive fair treatment from the dealer in that particular town. If it does not, the bureau will take the matter up with the manufacturer. Wherever any dealer persists in making excessive or unreasonable charges the bureau will refuse to recommend that dealer for repair work and his manufacturer will be notified immediately.

Furthermore, the bureau will have in its employ a number of experienced motor car men who will be able to judge any item of time or repair parts. It will be extremely difficult for an unscrupulous dealer to overcharge or conspire with his customer to do work on the car not made necessary by the accident.

The service, of course, does not contemplate supplanting the adjusters of the insurance companies. The object is to provide a service which will assist in adjustments and make it possible for the insurance companies to have their repair work done by the manufacturer or dealer at a less expense and in a better way than elsewhere.

Traffic Conditions To Be Studied.

There are a number of additional features, valuable to underwriters, contemplated as part of the bureau which will be established as rapidly as possible. A careful record of all losses will be kept where there is any question concerning the claim. This will enable the bureau to furnish the insurance companies with data concerning various classes of risks.

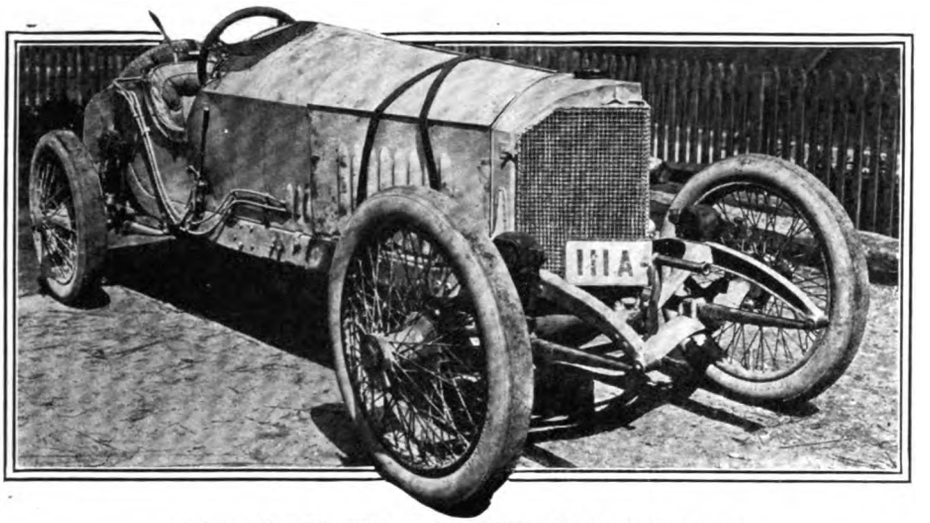
A careful study will be made of traffic conditions throughout the United States and of all circumstances surrounding every possible kind of motor car hazard, all of which will be useful in insurance work. The bureau will cooperate with local authorities throughout the United States in an effort to eliminate from the public highway, as far as possible, the reckless driver. In all cases of reckless driving coming to its attention the bureau will insist that the highway commissioner revoke the driver's license.

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FRENCH GRAND PRIZE TO GERMANY

Mercedes Trio, Lautenschlager, Wagner and Salzer Finish 457-mile Grind One, Two, Three—Goux in Peugeot, Fourth—Winner Averages 65 Miles an Hour.

Driver and Car.	Time.
Lautenschlager, Mercedes	8:17:09
Wagner, Mercedes	7:08:18
Salzer, Mercedes	7:09:54
Goux, Peugeot	7:13:15
Resta, Sunbeam	7:17:47
Esser, Nagant	7:29:17
Rigal, Peugeot	7:40:28
Duray, Delage	7:44:28
Champoiseau, Schneider	7:51:32
Joerns, Opel	8:06:51
Fagnano, Fiat	8:26:11



ONE OF THE THREE WINNING MERCEDES CARS

Lyons, France, Grand Prix Race Course, July 4—Special Cable—Germany has come back, and the name of Mercedes is once more foremost in the motor car world. Today three Mercedes cars finished first, second and third in the world's classic road race, defeating the best racing creations of France, England, Italy and Switzerland.

Lautenschlager, who six years ago won the Grand Prix Race, was winner today, with an average speed of 65.55 miles per hour, which, while slow speed compared with the recent 500-mile race at Indianapolis, represents a gruelling pace when it is remembered that two-thirds of the course was over a decidedly winding country circuit of 23 miles.

Louis Wagner, one-time winner of the American Grand Prix at Savannah, was second, being less than two minutes behind the winner, and Salzer brought another Mercedes into third place scarcely five minutes behind Lautenschlager.

The best France could get was fourth place, captured by Jules Goux, who landed his Peugeot next after the three leading Mercedes. He was over nine minutes back of Lautenschlager and more than four minutes behind Salzer, the last of the three leading Mercedes.

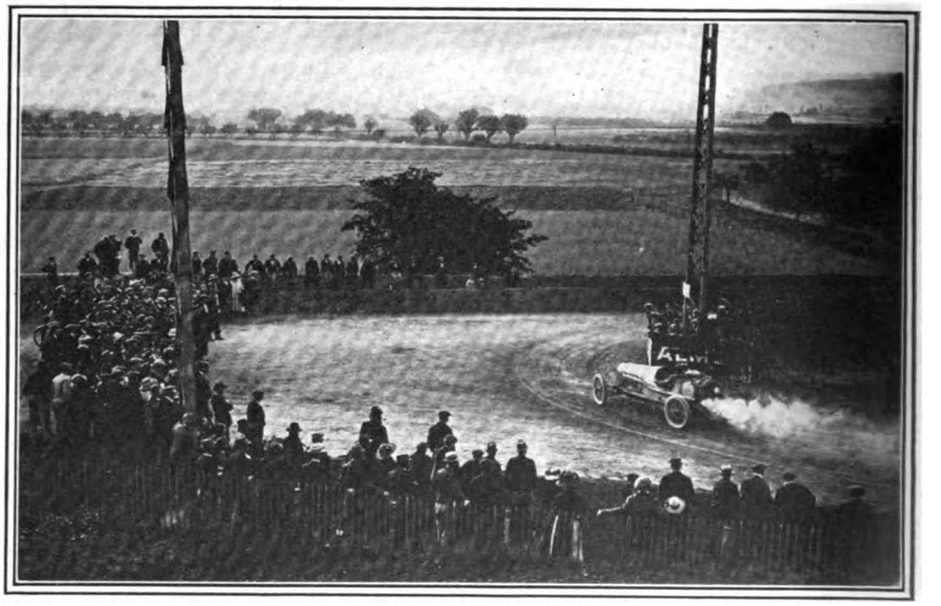
Boillot, the companion driver of Goux in the Peugeot team and winner of the last two Grand Prix races and on whom France had placed every confidence, was forced out by a broken motor with only one-half lap, or 10 miles, to go. He was in second place and had been fighting a duel against the three Mercedes pilots from the opening lap.

Boillot Works Into the Lead.

When the race was but a quarter over Boillot was in third place, scarcely two minutes back of Salzer. Boillot got in with the leaders on the sixth lap and held the lead from this point until the 20th, being pursued at all times by one or two of the Mercedes. When the race was half over he had a lead of one minute and fourteen seconds on Lautenschlager and was ably assisted by his teammate, Goux, then running in third place and being pursued by the other Mercedes, driven by Wagner and Salzer driving two minutes behind him.

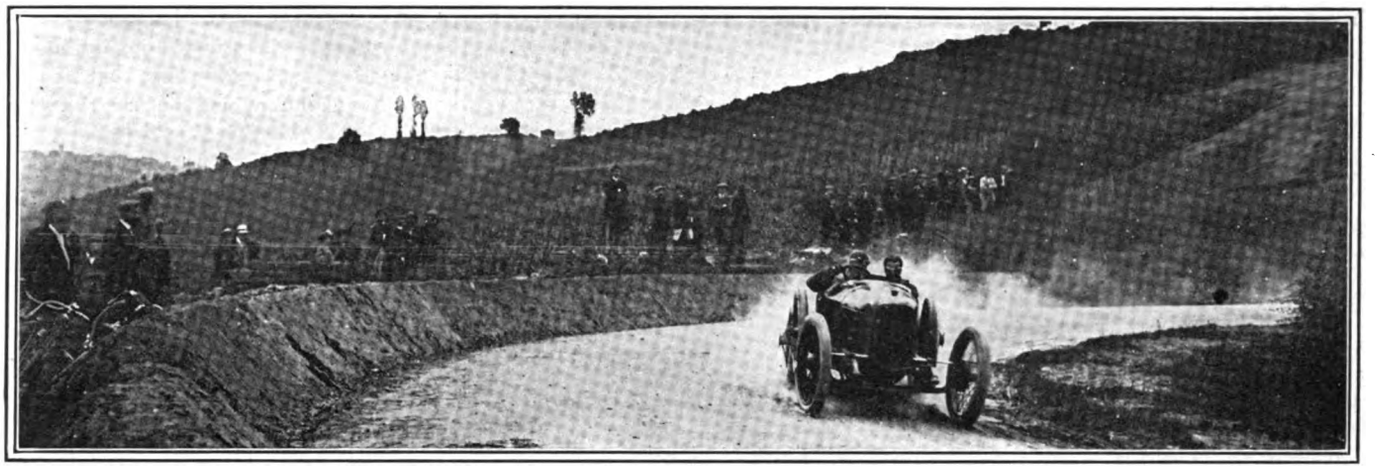
The three Germans drove a hounding race and by sheer might wore down Boillot, who was pushed as he was never pushed before in a road race. The Mercedes drivers, with three of them running so strongly, could afford to take chances which Boillot was afraid to take. Five Mercedes cars started and although two, driven by Salzer and Pilette, had had been eliminated, the three remaining, namely, Lautenschlager, Wagner and Salzer, drove a hard race.

As the seventeenth lap approached it



JOERNS (OPEL) ON ONE OF THE SHARP BENDS

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CAGNO (FIAT) ON THE WINDING DESCENT LEADING TO THE GRANDSTAND, SHOWING THE SAND-BANKED TURN

was seen that the situation of France was becoming more and more critical, as Lautenschlager was but 14 seconds behind Boillot, the champion of France. At this point the Peugeot camp sent out an emergency call to the Peugeot drivers to drive still harder. It was without effect, for on the next lap, the eighteenth, Lautenschlager had a clear lead of 33 seconds on Boillot. Once again was the emergency signal hung out for Boillot, but he was unable to respond to it, as he was worn out by the road-driving tactics of the superior Germans and his Peugeot car was visibly failing on the nineteenth lap.

Finish in Sight, Boillot Out.

When the nineteenth lap was finished Lautenschlager had 77 seconds lead on Boillot, and the only hope that France had was that the Germans would have tire troubles; but the tire trouble did not come. Fate was relentless and Boillot with only a half more lap to go and running in second place went down and out with a motor collapse, dashing France's hopes.

But little fortune awaited Goux in the other Peugeot. On the last lap but one he lost third position to Salzer driving the Mercedes, and finally came in fourth exactly 9½ minutes back of the winning Lautenschlager.

Race Proves Gruelling Grind.

That but 11 of the 38 cars to start were able to finish proved the gruelling nature of the contest. Over 300,000 spectators watched the contest, which was remarkably free from accidents, only two drivers suffering slight injuries. One of these was Sziss, familiar to Americans as having won the first French Grand Prix in a Renault and having competed in American Grand Prize races on the Savannah course in a similar make of car.

Today he drove an Alda and raced in hard luck throughout. He changed a radiator early in the race and later was working on a tire by the roadside when he was struck by one of the Opels. His shoulder was dislocated and he was generally severely bruised. The mechanician brought the car to the pits, where it remained.

Tabuteau, in another Alda, overturned on a difficult winding stretch of the road but was not severely injured. The third Alda, driven by Pietro, an amateur, only made six laps of the circuit.

England, represented by 6 cars, 3 Sunbeams and 3 Vauxhalls, had but one finisher of the 11 starters, Rosta finishing in a Sunbeam in fifth place. The Vauxhall cars are considered the finest racing productions and represent the most up-to-date design, but they were too green for a contest of this nature.

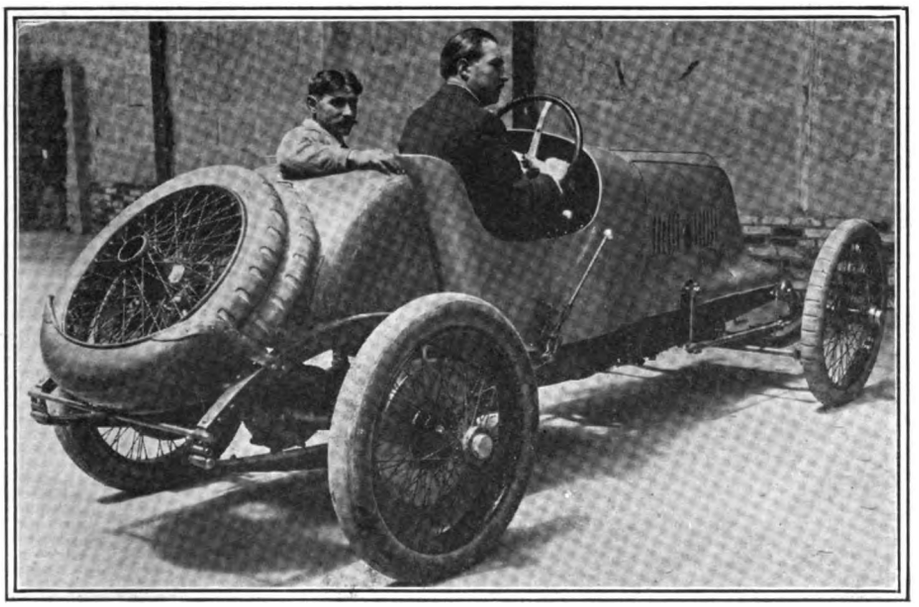
The cars and drivers were altogether unprepared for the race, and it was with difficulty that the cars were made ready in time to be weighed in, and only 24 hours before the start of the race all three were completely dismantled.

Ralph De Palma, the American driver, pilot of one machine, realized before starting that he had little chance of finishing. Hancock, driving one of the Vauxhalls, was more than 2 hours making the first lap, at the end of which he abandoned the race.

De Palma Completes But 5 Laps.

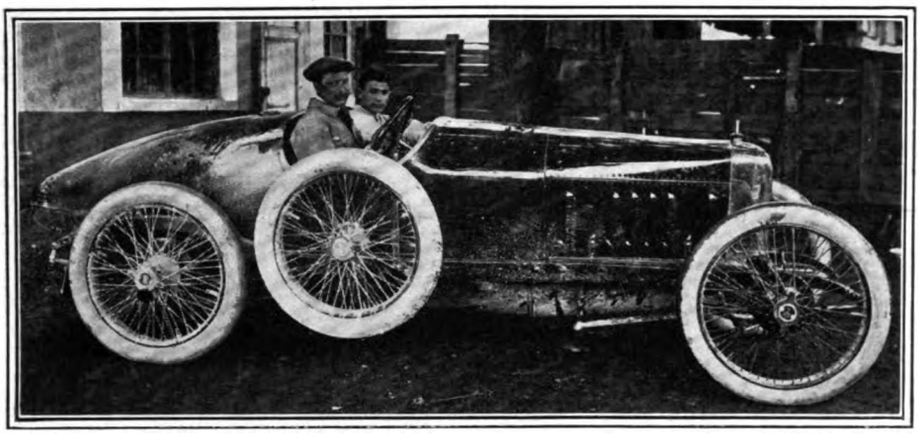
Watson, one of the other drivers, required about the same time to complete the circuit and withdrew, leaving only De Palma, who struggled hard against fate, covering the first lap in 26:29, as compared with 21:11, the best time for the initial circuit, made by Salzer in the Mercedes. De Palma completed the second circuit in about the same time, was a little faster in the third and fourth, and after he had completed the fifth he pushed his car off to the side of the road after passing the tire repair place.

The three Sunbeam cars made a better showing, and although Resta was able



TYPE OF SCHNEIDER CAR WHICH FINISHED EIGHTH

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FAGNANO IN THE FIAT HE DROVE INTO 11TH PLACE

to get but fifth place, the Sunbeam was the third make of car to finish. When five laps, or the first quarter of the race was over, Guinness, driving a Sunbeam and the winner of the recent Isle of Man road race, was in fourth position, scarcely 2 minutes behind Salzer, in a Mercedes, who was leading at that point, and ahead of Lautenschlager, Goux and Wagner. Chassagne, driving another Sunbeam, was in twelfth place, and Resta was further back.

With the race half over, Guinness withdrew with a broken piston head, having held fourth position from the fifth lap until that time. Chassagne was forced out on the thirteenth lap when running in seventh place, due to a broken bolt on the end of a connecting rod. The performance of Resta was a consistent one from start to finish. At the end of the first quarter he was below fifteenth place; when the race was half over he was in eighth place, and at the finish he was fifth, with his car working perfectly.

The three new Fiat cars made a favorable impression, and one of them, driven by Fagnano, finished eleventh, 34 minutes back of the leader. Cagno, one of the Fiat drivers, had trouble with preignition from the start of the race and this trouble also delayed Scales, driving the third Fiat. Fagnano drove a consistent race and was in ninth position at the end of five laps, with his teammate, Scales, in eleventh place. At the half-way point Fagnano was seventh.

Delages Prove a Disappointment.

The three Delage cars were a decided disappointment. Before the race all three had experienced trouble with backfiring into the carburetters, and thinking to obviate this defect, which was supposed to arise from a slightly imperfect seating of the positively operated valves, which are opened and closed by cams, a new adjustment was made a few hours before the start of the race. This proved a costly error, for immediately the speed of the engine dropped and the engine power was cut down considerably. Bablot never got better than twelfth place, and Guyot once reached eighth position. Finally both Bablot and Guyot withdrew disheartened, two laps before the finish of the race, rather than come in as tail-enders.

Cars Sent Away in Pairs.

At the start a new order of procedure was made use of, and one which greatly added to the interest of this event. Instead of sending cars away singly they were dispatched in pairs at 30-minute intervals, and this method of starting gave the throngs of spectators an excellent opportunity of judging the accelerating qualities of the cars as well as the ability of the drivers in handling the gears. Ordinarily acceleration and gear-handling are small factors, but in today's race on the 23-mile circuit, with its continuous curves, both accelerating qualities and ability to handle gears were controlling factors.

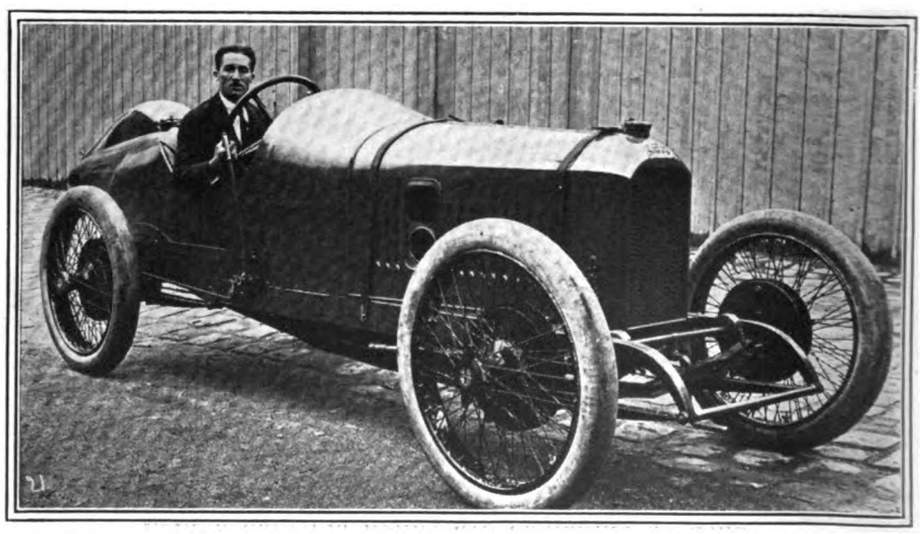
Thirty-eight of the original 41 cars faced the starter. It was only 10 minutes after the last pair of cars, two Mercedes, driven by Wagner and Pilette, had been sent away, that the signal was given from the top of the hill directly opposite the grandstand that the first car was approaching on the end of the first lap.

Felice Nazzaro, an Italian race driver, well known in America from the day when he piloted Fiat cars, had three of his new Nazzaro machines entered, but none of which were ever important factors in the race. Nazzaro himself piloting one, was forced to abandon the contest early in the struggle, due to an unsufficiently prepared car. Porporato, driving another Nazzaro, had various small troubles throughout the race, but was running when the race was called off and 11 cars had finished.

Switzerland's Two Cars Withdrawn.

Switzerland was represented by two Piccard-Pictet, which are single-sleeve motors, built on the Argyll license. Each sleeve has a double movement, a reciprocating one and a part rotating one. The sleeves gave no trouble, but both cars were withdrawn due to chassis defects. Tournier, piloting one, suffered considerably with brake-trouble, his differential brake seizing at the pits and having to be cooled with water and oil. The race was a gruelling one for brakes, due to the many curves, and many cars had difficulty in getting away again after stopping at the pits. Front wheel brakes, especially designed for the race, were fitted on three makes of cars, Delage, Peugeot and Fiat, and all proved decidedly helpful. They allowed the cars to go into the turns much faster and were also advantageous on the winding portions of the course and gave Boillot a decided advantage over the Mercedes on this part of the circuit.

The management took every precaution to avoid accidents. There were banks of sand outside of every turn.



JULES GOUX AT WHEEL OF PEUGEOT THAT CAME IN FOURTH

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Every Dealer in New York Must Insure Under Workman's Compensation Act

New Law, Effective July 1, Applies to Garagemen and Repair-Shop Operators, as Well—Premiums Average $1.60 per $100 of Payroll per Year.

If, a few months ago, John Doe had been pretty badly smashed up in the course of his work and as a result was confined to his bed for a month or more, he would not only have lost his wages but in addition he would have had to foot the doctor's bill, regardless of where the blame lay. Even if the accident which laid him up were without doubt due to negligence on the part of his employer, John Doe would get nothing unless it were out of the goodness of his employer's heart.

He would have had one alternative, however. He might have gone into the courts and sued his employer for damages, but unless the jury that heard the case decided that the blame lay with the employer, our friend, John Doe, would still be out; and, be it added, in only one case out of every 7½ brought into courts has the jury decided in favor of the injured workman. In the other 6½ cases the workman has received nothing.

New York's Law Is Most Drastic of Any Now in Force.

But all that is changed now under the Workman's Compensation Law, which went into effect in New York state last Wednesday, July 1. This law virtually supercedes the old Employer's Liability Law in certain respects, and, to a certain extent, the common law defense as well.

For years other states and other countries have had workmen's compensation laws; but not until now has New York state had one all its own. The law that has just gone into effect is one of the most important and the most far-reaching pieces of legislation that has ever been enacted in New York state.

It applies to 47 groups of what are styled "hazardous" employments. The include more than 1,000 occupations. The various groups of so-called hazardous employments include practically all manufactures in the motor car and allied industries. They also include operators of garages and repair-shops, as well as motor car dealers. Even though this business is not specifically mentioned in the law, any more than are hundreds of other occupations which may or may not be considered hazardous, the commission has recently ruled that they must be included.

Employer Made Responsible for Injuries Whether at Fault or Not.

The law states specifically that it shall apply to every hazardous employment where the workman is employed "for the pecuniary gain of the employer." This new law differs from the old common law in that it makes an employer responsible for injuries to his workmen whether or not the master is at fault; also, the old common law plea of contributory negligence on the part of a fellow workman is eliminated. In other words, it provides that every workman employed in any one of the so-called hazardous classes who is injured must receive a stated compensation.

The employer is compelled to provide this compensation; the employe cannot refuse to accept it. Agreements between the employer and the employe to waive any such compensation cannot be made, nor can the employer compel the workman to help pay premiums.

At the same time, the law takes away from workmen any and all right to sue under the common law for alleged damages. It also relieves the employer of the responsibility of such suits, but the employer must provide for compensation to his workmen; the law is virtually compulsory in this respect.

The entire burden falls upon the employer, and whereas under the old common law the workman was required to prove negligence on the part of the employer in order to recover for injuries received, the new law assumes—in the absence of substantial evidence to the contrary—that

1. The claim comes within the law;
2. That sufficient notice was given;
3. That the injury was not willfully intended;
4. That the injury did not result solely from intoxication while on duty.

If the employer fails to pay compensation within 10 days subsequent to the time when it is due he is subject to a suit by the state commission, which may declare the entire compensation recoverable in a lump sum with a penalty of 50 per cent. in addition. Such due payments constitute a liquidated claim for damages against the employer or the insurance carrier.

If any employer fails to comply with the law by adequately providing for compensation to his workmen, the law states that "he shall be liable to a penalty for every day during which such failure continues of $1 for every employe, to be recovered by an action brought by the commission." The commission may, however, at its discretion, remit such penalty provided the employer secures proper compensation.

47 Groups of Occupations Are Included Under the Law as Hazardous.

As already has been stated, the law is intended to insure compensation to those workmen whose labors come within the 47 groups that the commission has adjudged to be hazardous. Of these 47 groups there are probably seven that apply directly or indirectly to the motor car industry insofar as the dealer, garagemen and the repair-shop operator are concerned. These seven groups are as follows:

Group. 4. The operation, including construction and repair, of car shops, machine shops, steam and power plants, not included in group three. [Group 3 includes railroad machine shops.—Ed.]

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Group 16. Manufacture of furniture, interior woodwork, organs, pianos, piano actions, canoes, small boats, coffins, wicker and rattan ware, upholstering, manufacture of mattresses or bed springs.

Group 21. Iron, steel or metal foundries, rolling mills, manufacture of castings, forgings, heavy engines, locomotives, machinery, safes, anchors, cables, rails, shafting, wires, tubing, pipes, sheet metal, boilers, furnaces, stoves, structural steel, iron or metal.

Group 23. Manufacture of small castings or forgings, metal wares, instruments, utensils and articles, hardware, nails, wire goods screens, bolts, metal beds, sanitary, water, gas or electric fixtures; light machines, typewriters, cash registers, adding machines, carriage mountings, bicycles metal toys, tools, cutlery, instruments, photographic cameras and supplies, sheet metal products, buttons.

Group 24. Manufacture of agricultural implements, threshing machines, traction engines, wagons, carriages, sleighs, vehicles, automobiles, motor trucks, toy wagons, sleighs or baby carriages.

Group 25. Manufacture of explosives and dangerous chemicals, corrosive acids or salts, ammonia, gasolene, petroleum, petroleum products, celluloid, gas, charcoal, artificial ice, gun powder or ammunition.

Group 41. The operation, or otherwise than on tracks, on street highways, or elsewhere, of cars, trucks, wagons or other vehicles, and rollers and engines propelled by steam, gas, gasolene, electricity, mechanical or other power or drawn by horses or mules.

Commercial Chauffeurs Included; Drivers of Private Cars Exempt.

Group 41 covers very broadly the operation of motor cars and commercial vehicles, but in this respect it should be pointed out that the law states specifically that compensation shall be paid only to those who are employed for the pecuniary gain of the employer. This makes it plain that chauffeurs who drive private cars, for instance, do not come within the law inasmuch as they are not employed for the pecuniary gain of their employers. Taxicab chauffeurs, however, and the drivers of commercial vehicles, are clearly within the law. This applies to the drivers of both electric and gasolene vehicles where operated for hire.

Although motor car salesrooms are not specifically mentioned in the law, the commission has ruled that they are included under the so-called hazardous employments, though it is difficult to determine in just what group they would be included.

The operation of repair-shops is quite clearly covered by Group 3 and this group may also be construed to cover the operation of garages.

Quite likely it will be a long time before it is definitely decided just what occupations do come within the provisions of the law and those that do not. Obviously some parts of some employers' businesses will come within one of the 47 groups of hazardous undertakings. Whether or not the employer must insure all of his employes under this condition, or only those who are employed in a hazardous undertaking is still a moot question. The doubt can only be dispelled by decisions of the highest court, which means, of course, only after lengthy litigation.

Employer Given Four Choices in Providing the Insurance Necessary.

The only occupations which are specifically excluded in the letter of the law are farm labor, domestic service and work other than "for the pecuniary gain of the employer." There may be scores, perhaps hundreds, of other occupations which are not included within the 47 groups not affected by the law, but in a great many cases the line of distinction is not clearly marked. All of these questions can only be answered after they have been passed upon by the highest courts.

The employer is compelled to provide compensation for those of his workmen whose occupations come within any of the 47 groups. He is not permitted to state that he will provide this compensation; he is compelled to give evidence that the compensation will be paid by insuring its payment. This may be had in one of four ways:

He may insure with the State Fund which is created under the new law for the purpose; he may insure with a mutual insurance company; he may insure with one of the many stock companies; or he may carry the insurance himself. It is not likely, however, that many employers will care to insure themselves; only men of unquestioned financial ability will be permitted to do so. Furthermore, "the commission may, in its discretion, require the deposit with the commission of securities of the amount prescribed in Section 13 of the insurance law in an amount to be determined by the commission to secure his liability to pay the compensation provided. . . ." This security must remain until the liability for compensation ceases, which may be for 50 years or more.

Insurance in the State Fund Eliminates Employer's Liability

There remain, therefore, but three ways in which the average employer can insure the payment of compensation. Each method has its advantages and its disadvantages. The cost of each method to the employer will be approximately the same. If the employer insures with the state fund, he is automatically relieved of all further liability for compensation. If, on the other hand, he insures with either a mutual company or a stock company, he is not relieved of all liability, for if the "insurance carrier," which means the company with which he insures, should fail, the employer would still be liable for compensation which might go on for an indefinite term of years—50 or more. As a measure of comfort, it may be added that such companies do not often fail. However, this slight hazard exists and it should not be overlooked, for only by insuring in the State Fund can the employer be relieved of all future liability.

If the employer insures with a stock company, he will be required to pay a specified semi-annual premium based upon the amount of his payroll. This premium will never vary except as the payroll varies.

The premium which will be required by mutual companies, however, may vary. In other words, there may be assessments in addition to the premium. If, for instance, there should be a terrible catastrophe which would levy so heavily on the resources of the mutual company that an insufficient amount was available for the payment of all compensation, it would then be within the power—it would also be the duty—of the officers of the company to make an assessment upon each of the individual insurers to make up the difference.

The advantages of insuring in the State Fund are claimed to be two in number.

These are:

1. The employer who insures in this way extinguishes his liability to pay compensation, and
2. That the expense of managing the fund—not the claims for compensation, however— will be paid

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by the state for a time. [Two and one-half years.—Ed.]

Those who insure in the stock companies, on the other hand, will be liable for no extra assessments. Those who elect to insure their compensation in a mutual company virtually insure themselves; they become partners in a company which carries the insurance. The advantages of this form of insurance are claimed to be

1. Less expense, in that agents are eliminated;
2. Possibility of dividends in case the premiums should be slightly too high at first due to lack of experience;
3. Ability to insure against employers' liability under the common law and to reject undesirable risks.

Dealers With or Without Garage Pay $1.36 per $100 Payroll per Year.

In this respect it should be pointed out that whereas both mutual companies and stock companies have the privilege of rejecting undesirable risks in the same way that life insurance companies will refuse to write insurance on the life of a sick man, the State Fund has no such privilege; it must take all those who apply for insurance. It has the privilege of making its rates so high that they are prohibitive, however.

The cost of workmen's compensation insurance by two of these three methods is exactly the same. The rates quoted by the stock companies and those quoted by the mutual companies do not differ. The rates quoted by the State Fund, however, are exactly 8 per cent. less than those of the insurance companies.

In every case the premium rates are based upon the total payroll, the premiums applying to each $100 of wages or salaries. The rates charged by both mutual and stock companies for electric motor car dealers, either with or without garage, is 97 cents per $100 of payroll per year. For dealers in gasolene cars, either with or without a garage, the rate is $1.36. The rates charged by the State Fund on the same risks are 89 cents and $1.25, respectively.

These rates apply on the entire payroll, including such executive officers whose duties may expose them to the operative hazard of the business. The salaries of these officers is only included up to $1,500 a year, however.

The premium charged by the stock and mutual companies on machine shops which have a foundry is $2.07 per $100 of payroll per year. Where there is no foundry the premium is $1.36. The State Fund rates are $1.90 and $1.25, respectively.

The premium for a chauffeur driving a car for the pecuniary gain of his employer under the stock and mutual rates is $2.43 per $100 of payroll per year. The State Fund is 8 per cent. less. In neither case, however, can the total premium be less than $15 a year.

These are but some of the rates which apply directly to the motor car dealer, the garageman and the repairman. It would require a fairly large book to list all of the rates. Both the stock and mutual companies and the State Fund officers will gladly quote rates on the occupations not covered herewith.

In connection with these rates, it should be remembered that under certain conditions reductions of as much as 40 per cent. may be made. Working together, the stock and mutual companies and the State Fund have created an inspection bureau. It will be one of the duties of this bureau to inspect the premises and to order reductions in rates in accordance with the condition of the premises. In other words, a machine-shop, for instance, which is in poor condition and where open gears, unprotected belting, unprotected stairways, etc., are rule rather than the exception, will pay the maximum rate; but where an earnest effort has been made to reduce the hazard under which the workmen operate, reduction in rates will be made accordingly.

Employer Compelled to Furnish Medical Treatment to Workmen.

What does the employe get under any of these forms of insurance? For the first two weeks subsequent to his injury he gets nothing, but the employer is required to furnish medical or surgical treatment for the first 60 days. During this period of the workman's disability the law states that the employer must furnish "such medical, surgical or other attendance or treatment, nurse and hospital service, medicine, crutches and apparatus as may be required or may be requested by the employe during 60 days after the injury.

In this respect it should be pointed out that the law states, "may be requested" by an employe. The law places no limitation on what the employe may request; the employer must accede to the request; nor can the expenses of such treatment be deducted from any compensation which is due the workman. If the employer, after such request, refuses to furnish such treatment, the injured employe may obtain the treatment at the expense of the employer; the commission has jurisdiction over the charges.

As already has been laid down, every workman engaged in a hazardous occupation is entitled to compensation with but two exceptions: If the injury results solely from his own intoxication, he is debarred from compensation; if the injury results from the willful intention of some other party, he also is debarred.

Benefits Under the Law May Cover Period of from 40 to 50 Years.

The compensation due the workman is based upon his average weekly wage. This average weekly wage is obtained by multiplying his daily wage by 300 and dividing the product by 52. For total permanent disability, the workman will receive 66 2/3 per cent. of his average weekly wage during the continuance of his disability.

Suppose, for instance, the case of a man 21 years old, earning $22.50 a week. If he is permanently totally disabled he will receive $15 a week as long as he lives; there is no limit to the amount of payment. If he lives 40 years, he receives $31,200; if he lives 50 years, he receives $39,000.

For total temporary disability, this same workman will receive $15 a week during the continuance of his disability until he has received a total of $3,500; for partial temporary disability he will receive $15 a week for varying lengths of time, depending upon the extent of his injury, the schedule being as follows:

Loss of	Weeks	Total Payment
Thumb	60	$900
First finger	46	690
Second finger	30	450
Third finger	25	375
Fourth finger	15	225
Great toe	38	570
Any other toe	16	240

(Note.—The minimum limit of weekly compensation is $5. In other words, if the workman is receiving but $5 a week the compensation will amount to his regular wage; the maximum limit of weekly compensation is $15 a week.)

Loss of	Weeks	Total Payment
Hand	244	$3,660
Arm	312	4,680
Foot	205	2,075
Leg	288	4,320
Eye	128	1,920

(Note.—The minimum weekly compensation is $5 and the maximum in this case is $20 per week.)

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In all other cases the rate of compensation will be 66 2/3 per cent. of the average weekly loss of wages payable during the continuance. In such cases there is no limit to the amount which may be paid.

In this schedule the loss of both hands or both arms or both feet or both legs or both eyes, or of any two thereof, shall constitute permanent total disability, in the absence of conclusive proof to the contrary. The permanent loss of the use of a hand, arm, foot, leg or an eye will be considered as the equivalent of the loss of such member.

If the workman succumbs to his injuries the benefits to be received by the persons following will vary; in the first place, the heirs or dependents will be allowed reasonable funeral expenses, not to exceed $100.

Employer Has Nothing to Do With Payment of the Compensation.

Taking the case of the man who was earning $22.50 per week, for instance, a surviving wife would receive 30 per cent. of the average wage of the deceased, or $6.75 a week, during the continuance of her widowhood. Upon remarriage she would receive two years compensation, or $702, in a lump sum. If there were any surviving children under 18 years of age, the widow would receive 10 per cent. of the deceased's wages for each in addition.

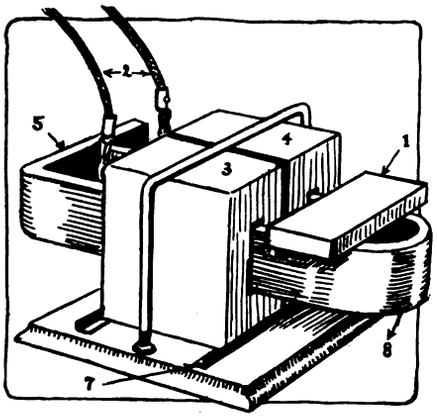
In no case has the employer anything whatsoever to do with the payment of compensation; this matter is handled entirely through the workman's compensation commission. Claims for compensation must be made within one year of date of the injury or death of the workman. The workman or his representative is required to give to the commission in writing notice of any injury for which compensation is payable within 10 days after the disability, and in the case of accidents which result in death within 30 days. Employes who claim compensation must, if requested by the commission, submit themselves for medical examination.

Compensation will be paid periodically in accordance with the method of payment of the wages of the employe at the time of his injury or death. Immediately the legitimacy of the claims for compensation has been established, a check will be forwarded to the workman. Such compensation is paid to the injured workman regardless of and in addition to any other insurance or benefits which may be due him; the compensation is exempt from the claims of debtors.

DEVICE PUTS NEW LIFE INTO WEAKENED MAGNETO

Cheap and Effective Method of Restoring Magneto Magnets to Original Strength Can Be Operated by Anyone.

To eliminate the annoyance resulting from demagnetized magneto magnets, as well as to enable anyone to recharge them with the best results, the Peerless Mfg. Co., Rock Island, Ill., has brought out a charging device that is easily operated even by those who are unfamiliar with the rudiments of electrical work and which will charge magneto magnets from an ordinary storage battery or from



PEERLESS MAGNET RECHARGER WITH MAGNET IN PLACE FOR CHARGING

a set of dry cells at a cost so low as to be almost negligible; according to the makers, the current for charging one magnet costs about a cent.

In addition to being easily operated, the Peerless charger is stated to have the advantage of imparting a magnetic charge some 20 per cent. stronger than that imparted by other methods for the reason that the magnetization is effected by placing the magnets directly in a powerful field produced by special coils, and not by the secondary effect of other permanent magnets.

So far as outward appearance is concerned, the device consists of two rectangular cases of nickeled metal, mounted on a track on a polished base and held in place by a clip which, however, permits one of the rectangular casings to slide back and forth so that its distance from the other can be adjusted. Transverse rectangular openings pass through the two.

The casings, marked 3 and 4 in the accompanying illustration, are the magnets, and each is wound by a special system which calls for the use of four different sizes of wire; the amount of wire in each coil is about 1,000 feet. The ends of the windings are brought out to the terminals 2, to which the battery terminals are connected when charging a magnet. The rectangular openings are the hollow iron cores of the magnets, into which the legs of the magnet are inserted; the magnet may of any width, the sliding of one of the coils on the track, 7, providing for sufficient variation to accommodate any of the magnets used in modern car magnetos.

When charging a magnet it is placed as shown at 8; 5 forms an adjustable keeper and floating core, to be kept in contact with the poles of a magnet being charged and 1 is a keeper that is placed on the magnet when it is being withdrawn to prevent partial loss.

The process of charging a magnet is not only simple but can be performed in an extremely short time. The instrument is connected to the battery and the horseshoe magnet tested by holding it a short distance from the electro-magnets to ascertain the proper position with relation to polarity—that is, the magnet must be attracted and not repelled. Then the current is shut off, the horseshoe inserted in the openings in the charging magnets and the current passed through the coils by touching the binding posts with the end of the wire two or three times. The iron keeper is laid across the projecting part of the horseshoe, which is then replaced on the magneto, after which the keeper can be removed.

The standard charging outfits are designed to work on 6 volts, though they can be wound for practically any voltage; only direct current can be used, though its source is immaterial as long as the voltage is correct. While the circuit is closed the current flows at the rate of 20 amperes; but the time required is so short that the actual amount of current used is small.

The makers state that the pull required to separate a piece of iron from the electro-magnet cores while the current is flowing is 600 pounds, while the ordinary charging apparatus exerts a pull of only 302 pounds.

A tungsten steel magnet charged by the usual process will lift approximately 20 pounds when freshly charged; when charged by the Peerless system, however, the lifting capacity is said to be increased to about 30 pounds. The apparatus weighs 14 pounds and the list price is $35.

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Remember Man's Name and Make It An Asset

Calling Prospect By Name Makes Him Like You and Your Methods, Says Reilly—Helps in Selling.

By Ray W. Sherman

"Wait a minute, I've got to see this man."

Henry Bennett, who commenced handling the Redman car a couple of months before, left Reilly sitting at a desk on the salesroom floor and moved toward the man who had just come in the door.

"How'dy do, Bennett?" greeted the visitor.

"Fine! How are you?"

"How's business?"

From that the conversation went to numerous things, but mostly to the car the newcomer was thinking of buying. When he left he was in much the state of mind he was in when he entered—and he probably would be so for days to come, for he was the type of man who has to worry so much over all the cars built before he can buy a 1906 runabout for $80. Tommy Trumbull would call him a fussbudget.

Reilly's Neighbor.

"Who's that?" asked Reilly after the man had gone and Bennett had returned to where Reilly sat.

"Don't you know him? That's Harold P. Heffernan, the contractor. He lives out in your end of the town. You ought to know your neighbors better than that."

"I've got something else to do besides running around calling on all my neighbors."

"Oh, very well," drawled Bennett, with assumed sarcasm; "that may be so, but we've heard different. We know you."

"Maybe," smiled Reilly.

"But you ought to know Heffernan."

"I do know him, but ever so slightly," replied Reilly. "I haven't seen him in a long time. I thought I knew him when he came in, but I couldn't place him. No one ever could forget that face if he saw it a couple of times—big, ruddy boy that he is."

"I guess he leads a pretty strenuous outdoor life," was Bennett's comment.

"How long have you had him in tow?"

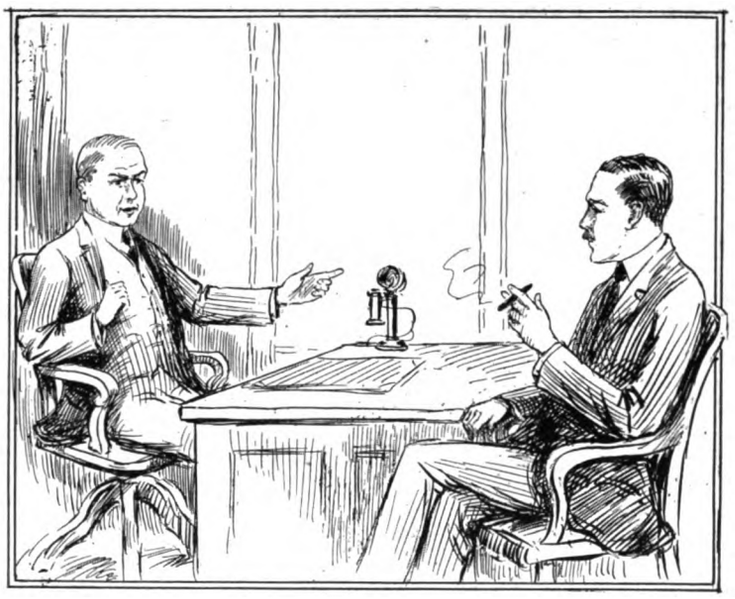
"Not long. Why?"

"Why don't you call him by name when he comes in? Don't you ever do that?"

"Why didn't I? I don't know. I don't know whether I do so or not. What difference does it make, anyway?"

"Quite a lot, Henry, quite a lot."

"Whaddyuh mean? Quite a lot?"



"IT MAKES YOU MORE SOLID WITH THE MAN—IT HELPS YOU GET ALONG WITH HIM—IT HELPS SELL HIM A CAR"

"You ought to do that always—if you can," said Reilly. "It's good business. It helps out."

"Helps out? How?"

"Oh, you know"—Reilly made funny little gestures with his index fingers extended—"it makes you more solid with the man. It helps you get along with him. It helps in selling him a car."

"It does?"

Likes Idea of Being Known.

"Didn't you ever go into a cigar store, or a haberdashery, or a barber shop, of a hotel, or a restaurant, or anywhere else? And don't you remember that in some of these places you were called by name every time you went in? Didn't the proprietor or some clerk greet you and call you Mr. Bennett—or Bennett, if he knew you well enough—and didn't you rather like the idea of feeling that you were known?"

"Ye-s-s," slowly and thoughtfully admitted Bennett. "I do remember such things now that you speak of them."

"And you liked it, didn't you?"

"I must admit that I did. I must also admit that unless I'm mistaken I take pleasure in giving my trade to those places. I like them."

"Now answer your own question!" asserted Reilly. "Why did you do it? Why did you like it?"

Why Did He like It?

"Hum-m-m." mused Bennet. "Darned if I know—but I liked it just the same, didn't I?" And he looked up at Reilly and laughed good-naturedly.

"You certainly did." Reilly laughed in return. "And," he added, "it works the same way with almost anyone. Try it. See if it doesn't."

"But what's the why of it?"

"The why of it doesn't matter; and I don't know that I know what it is anyway. It just works, that's all. Not everyone can do it; I'm a little weak on it myself, but heaven knows I've tried hard and am still trying. I never used to be able to remember a name while I was being introduced to a man, and it has been an awful drill for me to get so I can remember a name at all. I know it is a big help and that not being able to do it is a weakness and I do the best I can. I do believe, however, that I am getting better slowly.

"But a man who deals with the public should be able to remember names. And if he can remember them—as I think you can—a man should make use of them. When a man walks in, say 'Good afternoon, Mr. Heffernan.' It is many times more effective than a plain 'Good afternoon.' It sets you several steps forward with him. He is more favorably inclined toward you.

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"Just why, I don't know. It flatters him somewhat to think that he is so well known that people call him by name when he walks into a public place. You know how that little thrill of self-congratulation goes through you when you walk into a restaurant after the theater and the head waiter says, 'Good evening, Mr. Bennett.' It's the same thing. Being called by one's name in public places is pleasing to a man."

"I'm sure of it. I can recall lots of instances now."

"If there are two business places side by side and both are equally good and have the same line of stuff, but if in one the customer will be pleasantly greeted and, above other things, called by his name when he goes in, I'll guarantee the customer will drop into this place more frequently than he does into the other. This being called by name sort of makes the binding tie stronger.

"It gives the customer the impression that he stands a little better with this store than some other customers, that he is personally acquainted there, and that he will be well taken care of. The other store might be just as ready to take care of him and do anything for him that the first store would, but the mental impression that the customer gets often means a lot more than the service he actually receives. If he thinks he likes a place, that settles it, no matter what his reasons are.

"When you dig up a prospect one of the first things you should do is get his name indelibly inscribed on your memory. Get it there so it won't come off. Then, having got it, make it an asset. What good does it do to remember the prospect's name if you aren't going to use it? It may be handy to be able to go to the right prospect card after he goes without having had to ask his name, but that is an infinitesimal part of its value.

"It is acquiring greater efficiency without the expenditure of any extra effort if you use the name to greet the man when he comes in. It helps in a varying degree—and if you're anxious to sell a car every little helps a lot. If you have a big name acquaintance with a large circle of people it will help you amazingly in building up your business."

"I am good at remembering names and faces," said Bennett.

"Young Tommy Trumbull is a regular wizard at it," continued Reilly. "He just naturally remembers names. If he hears a man's name once he never forgets it and can always hook the right name up with the right man. I naturally can't remember names and faces——"

"Why don't you try some of these object memorizing stunts?"

"A-g-g-h-h!" grunted Reilly. "I've tried 'em. They won't work. At least I never could make them work."

"I've heard they were very good," asserted Bennett. "I never tried the schemes because I never had occasion to, but I've heard they were a great help."

"Yes, they're fine!" exclaimed Reilly, disgustedly. "I've tried 'em and I know. Do you know Underhill, who lives four miles out on the Midtown road? Runs a big lumber and grist mill at the foot of the hill?"

"Yes, I know him. Why?" Bennett sensed something and laughed.

"Well, I tried this object memory stuff on him," stated Reilly. "The first time I met him I said 'Underhill, Underhill, Underhill; let's see, how can I remember that?' Then I figured it out like this: He runs a mill, the mill is at the foot of a hill. I had it! Simple as day—Mill—under the hill—Underhill. Easiest thing you know."

"Yes."

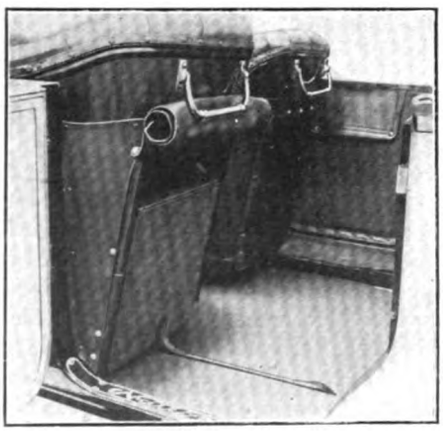
"Well, the next time I saw him coming I got to arranging my objects. I could get the hill and the mill under it and that made me thing of a piece called Jerry the Miller that I used to speak when I was a kid in school. So I figured—Mill—hill—miller—Jerry the Miller—name can't be Jerry—it certainly isn't Miller—Ah! Got it! Jeremiah! Mr. Jeremiah. Good afternoon, Mr. Jeremiah.

"Bah! It won't work!" exclaimed Reilly. "You've just got to remember, that's all."

National Adds Six-Passenger Body

Novel Extra Seats—Front Divided—Plenty of Room.

By way of increasing the scope of its line, the National Motor Vehicle Co., Indianapolis, Ind., has brought out a new model that is new only insofar as the body is concerned—that is to say, it is a new body on the same six-cylinder chassis which mounts the four- and five-passenger bodies.

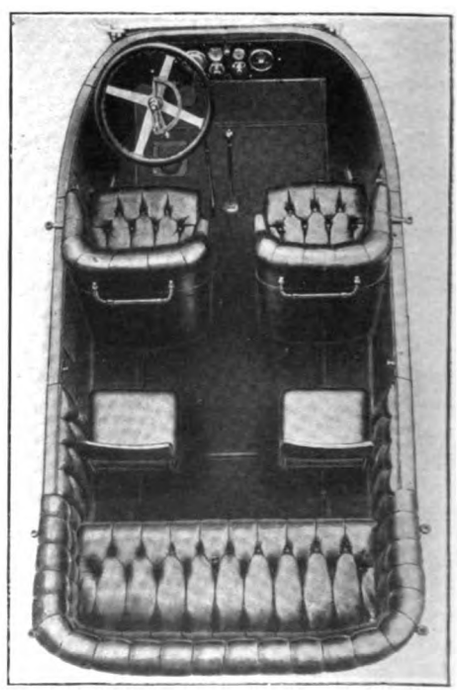


BACK OF FRONT SEAT SHOWING FOLDING AUXILIARY SEATS

The latest body is practically identical, so far as its lines are concerned, with the other bodies, though it is somewhat longer in order to permit the extra passenger accommodation, and a little larger in nearly all its dimensions.

A neatly worked out feature is the arrangement of the two extra seats, which, when not in use, fold forward into the backs of the front seats, the recess then being covered with curtains which are buttoned down. The most striking feature of the body, however, is the separation of the front seats, which are divided by an aisle which permits passengers to change about from front to rear or vice versa without leaving the car; the aisle is large enough to permit easy passage, but there is still ample room for the occupants of the front seats, which are left wide and roomy.

In the mechanical details of the chassis, wheelbase, tires and so on, the car is identical with the other Nationals.



TOP VIEW OF NEW NATIONAL BODY SHOWING DIVIDED SEATS

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Dealer's Legal Status

A Person May Start Suit Against Any Other Person Whenever He Feels So Inclinea—Good Cause Is Not Needed – Judgement Recovery.

By Geo. F. Kaiser

To most of us, the law is a tangled skein; it is not easy to untangle some of the knotty problems it brings up. It is comparatively easy to become involved in the mazes of the law; it may not be so easy to get out.

This LEGAL DEPARTMENT is intended solely to help the dealer. It aims to make plain the intricacies that puzzle us. Many problems already have been explained in detail; more will be taken up.

In the meantime, what is your particular trouble? Can we help you? We are here to lend a hand.

Unless a dealer has actually been sued a number of times, or has had occasion to sue somebody else, his notions of the courts and their procedure and practice are bound to be somewhat erroneous.

Of course it is not necessary for a dealer to be familiar with all the different court rules and methods of procedure, as that is something he pays his attorney to know. On the other hand, however, there are numerous little things which may help in a great measure toward winning your case if at some time you find it necessary to bring someone into court, or are yourself brought in by someone else.

For all ordinary purposes we may divide the courts into Civil Courts and Criminal Courts—the first class taking care of all civil actions, such as disputes arising out of contracts, sales, repair work, etc., and the second class criminal offenses, such as speeding, driving a car without a license, etc. At this time, we are more interested in the first class of actions.

May Sue for Spitefulness.

A question frequently asked by dealers is, When has one person a legal right to sue another? A person may start suit against another whenever he feels so inclined—if he has a good case, or even if he has no case at all. Unfortunately, there is no way of preventing one man from suing another just to harass and annoy him and, if the case is thrown out of court on the ground that the party bringing it has no cause of action, the only penalty he has to pay for his spitefulness or foolishness are the costs of the action. Of course, it would be hard to find a reputable attorney who would start a court action when he saw that there was really no merit in his client's claim, but, as it is not difficult to find one of the other kind, it frequently happens that such actions from time to time are started.

Where a case is dismissed and costs rendered against the party bringing it, the person who has been haled into court may find that he is out of pocket a much greater sum than that which the costs amount to. The court costs do not include the attorney's fees, but are simply certain arbitrary sums allowed by statute for certain things, such as serving summons and entering judgment.

Summons Service Starts Action.

We have any number of courts in this country which take care of civil actions. These may be brought in the United States Courts, the State Courts or the Municipal Courts in the various cities, according to the residence or citizenship of the parties, the amount of the claim and the subject matter of the suit.

An action is usually started by the service of a summons and complaint; the summons commanding the adverse party to appear in court on a certain day and answer the claim made against him, and the complaint setting out at length in technical language the details of the claim. The complaint is usually sworn to by the party bringing the action.

The party against whom the suit is brought then has a certain number of days, which varies according to the court in which the suit is brought, to answer the complaint. In his answer, which is also usually sworn to, he puts in his side of the case and sets out his counterclaim, if he has any. The next step with which the party is intimately concerned is the trial of the action, in which he will appear as a witness, together with such other people who are familiar with his side of the case as he may choose to bring into court, or subpoena.

Little Things That Cause Delays.

In the majority of cases, the trial of a case is not so easily reached however, as it is common practice in the courts for the parties to amend their complaint or their answer, to require a Bill of Particulars, which is an itemized statement of the matters in controversy, and to make motions in court regarding this, that or the other thing, until a long period of time has elapsed.

It is impossible to state how long it will take before a case will come to trial. In some of the lower courts, like the Municipal Courts, a trial may be reached within two or three weeks, while in others, like the Supreme Court of New York, it is likely that it will be a year or more before a trial is had, owing to the fact that there are always so many cases remaining undisposed of.

Personal Property May Be Exempt.

The case, of course, may never come to trial, as the complaint may be dismissed before trial, at the beginning of the trial, or when all the evidence is in. Even if the case is tried and judgment rendered, it does not necessarily follow that you will get the money you are suing for, as a judgment itself is only a lien on whatever real property the debtor may have and, in order to reach the personal property, execution must be issued to the sheriff who, when he calls around to levy on the debtor's property, may be told that the property belongs to someone else. In that event, the sheriff will refuse to touch any personal property, unless you can assure him that the debtor is the actual owner of the same and agree to indemnify him against any damages which may possibly be recovered from him in case that it does turn out that the property is owned by someone else.

Most states then allow an examination, in which the debtor can be put under oath and questioned concerning all of his property, both real and personal, and, if it finally appears that he has no real or personal property, his weekly wages (if he earns over some certain amount, as $12 in New York State) may be levied upon and he may be made to pay a certain percentage every week until the indebtedness to you is paid.

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WIDE-AWAKE MERCHANDISING

UNCOVERED HIDDEN LOSS AND MADE IT INTO GAIN

Dealer "Thought" He Was Making Money, But He Was Losing —Auditor Disclosed Many Leaks, Stopped Them Up and Developed New Sources of Income.

A builder of cars who had been very successful got to thinking things over one day and decided to make a trip around the country and call on every one of his dealers personally. He was moved to do this by reason of several little incidents, insignificant perhaps in themselves, but full of import to a man who felt that his future and that of his company rested upon his dealer organization.

By a perfectly logical process of reasoning he came to the conclusion that many dealers displayed an utter lack of business knowledge. He felt that in many ways this was a decided menace to the future of his company.

After ten days he decided that he had seen enough for the present. His next move was to send out an expert auditor. The idea back of this move was a sound one. He wanted to find out whether his dealers were making money. If not, why not? If so, how could they make more money?

What Auditor Found on First Job.

The story is about what this auditor found out in the first job he tackled and what he did about it.

"Of course I'm making money," said the first dealer interviewed.

"Have you a balance sheet?" asked the auditor.

The dealer did not have a balance sheet. He only **thought** he was making money because of the number of cars he was selling.

After a heart-to-heart talk, in which the purpose of his visit was fully disclosed, the auditor went through the books and revealed to the astonished proprietor the fact that the business was actually showing a **loss** of from $900 to $1,000 a year. In time the business would have ceased to be of any value.

His first move was to cut down the office force.

His next was the installation of a simple system of accounting that could be looked after competently by one girl.

That saved considerable money right off the bat.

Thought No Money in Washing Cars.

This dealer never washed cars. He said that at $1.50 a wash he could not make any money. The auditor proved conclusively that there **was** money to be made in washing cars and now this dealer is washing 15 to 20 cars a day.

The dealer furnished the public with **free air.** He did it in the usual way. He had a pumping plant down in the basement and a hose upstairs. Everybody helped themselves. Half the time the fastening was broken and about 50 per cent. of the air pumped was wasted. Even while using the pump the patrons of the **free air** would blame the dealer for not keeping it in better repair.

The auditor persuaded the dealer to install a "traveling tank" on wheels, instead of the other outfit. And today he is charging the public **ten cents** for pumping up and gauging tires. One man has charge of this pump and it is used only by employes; thus it is kept in the best mechanical condition. In six months the pump paid for itself.

It was also learned that instead of the ten-cent charge driving users away it really attracts them. He found out that even his customers would rather pay for this service than have it free.

Then the auditor quietly but forcefully told the dealer he was sitting around the office too much. He ought to get out and solicit business. Today this dealer is getting business he never dreamed of and is enthusiastic.

Special Stalls Brought a Return.

Another feature that added to income was the addition of "special stalls" to the garage end of the business. The[illegible]pecial stalls" were regular car spaces divided by wood slats and chicken wire from the rest of the garage and fitted with gates that could be locked at night or any other time, giving the customer practically a private garage inside the big one. The extra $2 or $3 a month secured for these special stalls paid a handsome return upon a very modest investment in wood slats and chicken wire.

A device for taking carbon out of cylinders was purchased [illegible] proved a money [illegible]

Thus patient st[illegible] analysis of the business by a man from the outside, fully qualified by broad experience to make suggestions, brought the dealer out of a rut into which he had slowly but surely slipped, and in six months **transformed a loss of nearly $1,000 a year into a substantial profit.**

Nothing Radical in the Plan.

It will be noted that in this reform work nothing radical was done or suggested. The effort was entirely along the lines of discovering the leaks, stopping them up and taking advantage of a few new sources of income.

This is a move in the right direction. Even if you cannot have the services of this auditor there are others available. And there are in this dealer's experience some suggestions of exceedingly practical value for every other dealer who adopts them. Remember, **action** is the word! An idea has no **value** to you unless you adopt it.

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CAR IN FRAME LIKE PICTURE

Regal Dealer in Detroit Made People Stop and Look.

An exceptionally strong window display, planned and executed by the Regal Motor Sales Co., Detroit, is shown on this page. The motive back of the display is a framed picture and the idea is carried out in an excellent manner.

"What did it do for us? It has been in use only three or four days. More than a thousand people came into our salesroom during the first three days as a result of the display, and they are still coming. Motorists passing by stopped their cars to take a look, until the police department had to be called on," said Manager F. A. Wager, who is responsible for the idea.

"It is by far the best thing we have ever done in the way of a window display, and it has convinced us that there are immense untouched possibilities in the realm of attractive window displays that it will pay us to cultivate. Already we are planning another display for use later on in the season."

Scene a Typical Rural Road.

A study of the photograph will reveal that the scene shows a typical country road with about 4 inches of real sand for a roadbed. The car is, of course, the [illegible] It is the latest [illegible] Regal.

The frame is [illegible] feet wide, 8 feet high in front, 6½ feet high at the back, and 9 feet deep. The whole affair rests on trestles and jacks designed to bring it to the level of the window. The flooring is made of 2-inch planks, and the car was backed up into the frame from the salesroom floor and then swung around into position by means of a sliding jack.

"The whole business cost us about $100," continued Wager. "The lighting cost about $30 of that amount, the frame cost in the neighborhood of $22, and the balance was for scenery, which, you will note, is portable so that it can be taken down and shipped to another point if we so desire."

And the fact that people were continually stopping and looking in the window while Wager was speaking is conclusive evidence of the practical value of the display.

At night the "picture" is illuminated by bulbs which extend around the entire frame, and it is planned to augment this lighting effect by playing a spotlight on the window from a store opposite during the busy part of the evening.

Inspiration Comes With Work.

Many a man has waited patiently or impatiently for an inspiration. And it did not come. Then, when he has resumed hard work and was not thinking of or hoping for an inspiration it came like a flash in the night. That is the way it always comes. The salesman who is working hard and calling on many prospects will get a hundred flashes of inspiration where the man who "humbly stands and waits" gets none.

GET A CARD SYSTEM IF YOU HAVEN'T ONE

Keep Records, Don't Work in the Dark —It Means Efficiency.

Have you a good card system for recording your prospects? If not, start one right away. Don't scratch your head and try to remember who your prospects are. Write them down. Keep the cards classified for daily, weekly or monthly reference.

Keep a record of every charge—even though it be for only a few cents. Here is an opportunity for you to earn, say, at least a hundred and fifty times fifty cents. Why not record it?

STOP UP YOUR SUPPLY LEAKS

One Dealer Organized a Separate Accessory Company

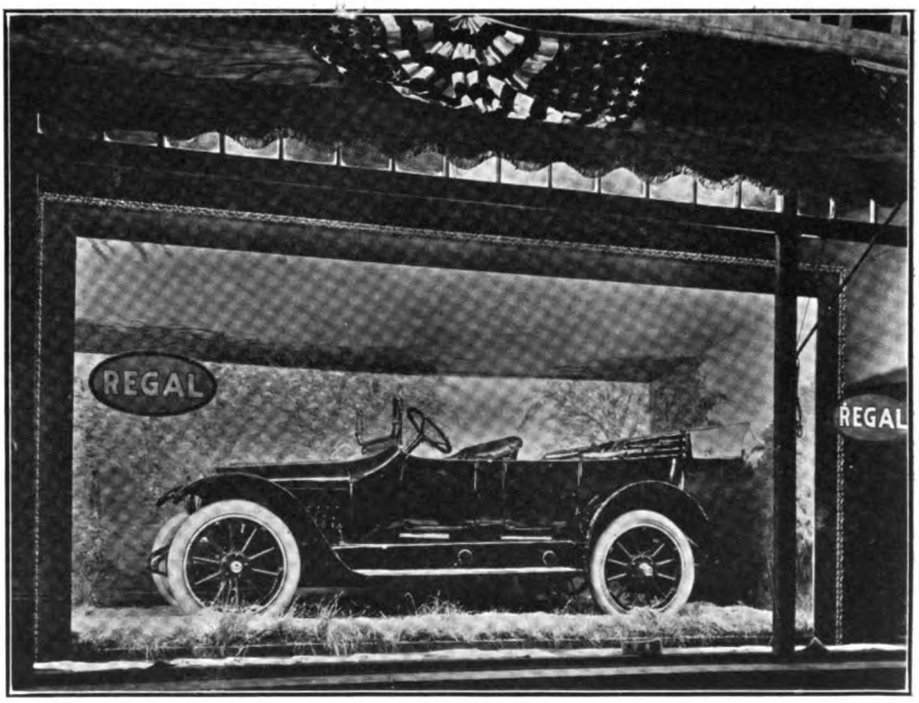
Many a dealer in cars has refused to handle accessories even though there was some demand for them because of the thought that the possible profits would be dissipated or offset by requests to "throw in" or give away various articles during the year.

One dealer has developed quite a profitable accessory and supply business and entirely eliminated the "give away" bugaboo. And this is how he did it:

A corner of his store is given over to a separate company, known as the Majestic Auto Supply Co. There is a cash register and he makes sales himself, as do most of his salesmen. But if anyone asks him to "throw in" anything—and that rarely happens—he points to the sign, remarks that it is a separate company and that he can hardly be expected to give away the goods of another corporation. It works. The business is growing and shows a profit.

Facts and Figures—Not Guesses.

Facts and figures are the real foundations on which to build business success. Many a business has been squashed by poor records and bad guessing.



THE EDGE OF THE WINDOW WAS MADE UP AS A PICTURE FRAME—THE FLOOR WAS MADE UP AS A COUNTRY ROAD—THE BACKGROUND WAS LEAFY SCENERY AND THE WHOLE HAD THE PERSPECTIVE OF A PICTURE

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Cole Rounds Out Line by Adding Little Six

New Model Much Like the Four, But Has Block-Cast Motor and 120-inch Wheelbase—Price Is $1865.

Rounded out by the addition of one more model, a little six, the line of cars marketed by the Cole Motor Car Co., Indianapolis, Ind., now consists of three models—a big six, a four, which was brought out last April, and the new little six, which has a block-cast motor 3½ x 5, a wheelbase of 120 inches and sells for $1.865 as a touring car. The motor is a Northway.

The new chassis carries two-passenger roadster, four- and five-passenger touring and coupe bodies, all of the same streamline type as their predecessors and all with 24-inch doors with concealed hinges and latches, wide mudguards and long, clear running-boards. Ignition, lighting and starting are provided for in the Delco combination system, the ignition having automatic spark advance.

A slight change in the starting system consists in separating the starting pedal from the clutch. Clutch and brake pedals have been made adjustable, so that the driver can arrange them for comfortable operation.

The cylinders and upper half of the crankcase are cast together with removable cylinder heads in pairs, so that the removal of any one uncovers two cylinders. The gearset is a unit with the engine. Instead of the usual breather pipes, an opening is provided through the cover of the valve stem and push rod housing.

The carburetter is the G-2 Stromberg, which is connected to the motor through a short branched intake header. A centrifugal pump on the right side, a Mayo cellular type radiator, and a three-bladed aviation type fan constitute the cooling system. Ignition is from the Delco electric equipment and has automatic spark advance. The lighting and starting system is Delco also.

The engine is of the high-speed type, capable of running up to 2,400 r.p.m. Block casting of the cylinders is a departure from former Cole practice. The reason for the change is that with the cylinders of 3½-inch bore it was found the block casting was not too bulky and heavy to be handled by the average garage and that the rigidity, permanent alignment and freedom from vibration of the block casting could be obtained without too much weight. In the big six, however, 4¼ x 5¼ cylinders, block cast, would be too unwieldy.

The little six is practically the same as the four, apart from the engine, though the wheelbase is 120 inches instead of 118, the added 2 inches being under the hood on account of the extra length of the motor. The three-speed gearset forms a unit with the engine. Timken axles and bearings are used, the rear axle being floating; service and emergency brakes are on 15½ x 2½-inch drums.

The car has left-hand drive, center control, irreversible Gemmer steering gear with an 18-inch wheel, and carburetter air control on the steering column.

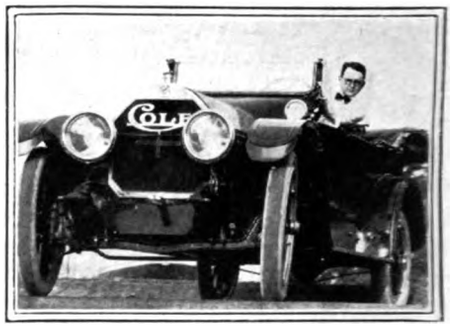
The frame is of channel section, double drop, pressed steel, extended in the rear to carry the gasolene tank and tire irons. The fuel tank is a Janney-Steinmetz, cylindrical, of pressed steel. Fuel is fed to the carburetter by the Stewart-Warner vacuum system. Tires are 34 x 4½ inches, on Firestone demountable rims; Firestone tires are regular equipment. The rear springs are ¾ elliptic, Detroit self-lubricating.

As is usual in up-to-date cars, the equipment is complete, including top with quick-adjustable side curtains and envelope, rain-vision ventilating windshield, Stewart-Warner speedometer and, of course, tools, jack, pump, etc. All the instruments are sunk flush in the instrument board. Headlights are of the double-bulb type, the small upper bulbs being for urban driving where the glare of the headlights would be out of place. The Delco generator cuts into the lighting system when it attains a speed of 300 revolutions per minute, which cor-

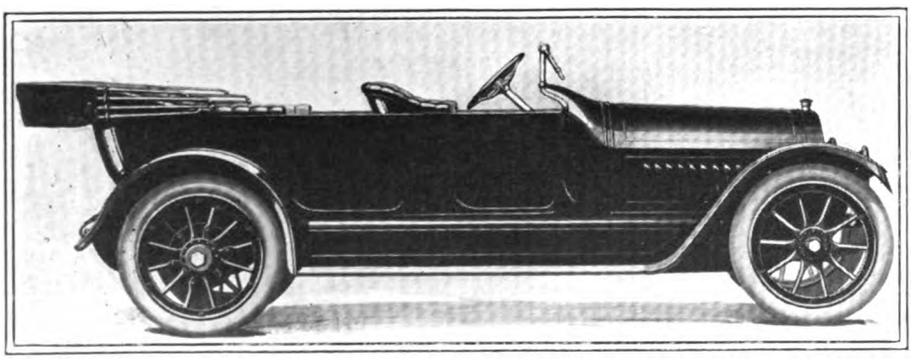
LEADING FEATURES OF NEW COLE LITTLE SIX.

Price, touring	$1,865
Make of motor	Northway
Number of cylinders	6
How cast	Block
Shape	L-head
Bore	3½
Stroke	5
S. A. E. horsepower	29.4
Ignition	Delco
Carburetter	Stromberg C-2
Lighting	Delco
Starting	Delco
Clutch	Cone
Gearset	3-speed
Wheelbase	120
Tires	34 x 4½
Wheels	Wood
Steering	Left
Control	Center
Make of axles	Timken
Type of rear axle	Floating

Equipment: Top, quick-adjustable curtains, envelope, electric lighting and starting, rain-vision ventilating windshield, tools, jack, etc.



STRIKING FRONT VIEW OF LITTLE SIX



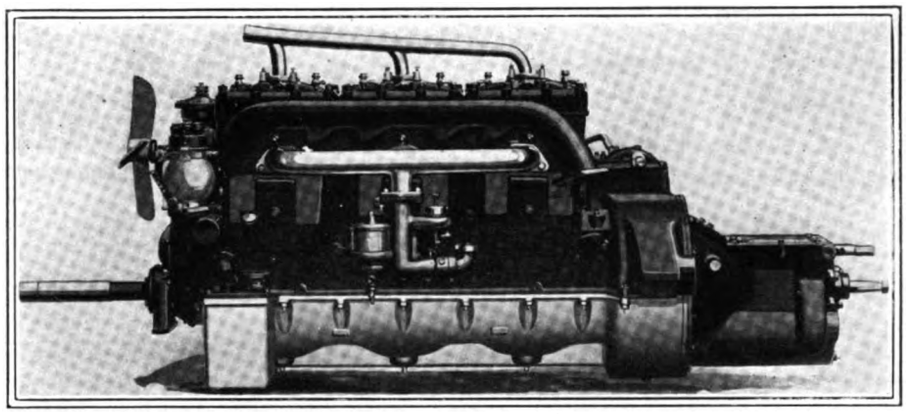
LATEST ADDITION TO COLE LINE—LIGHT SIX SELLING FOR $1865

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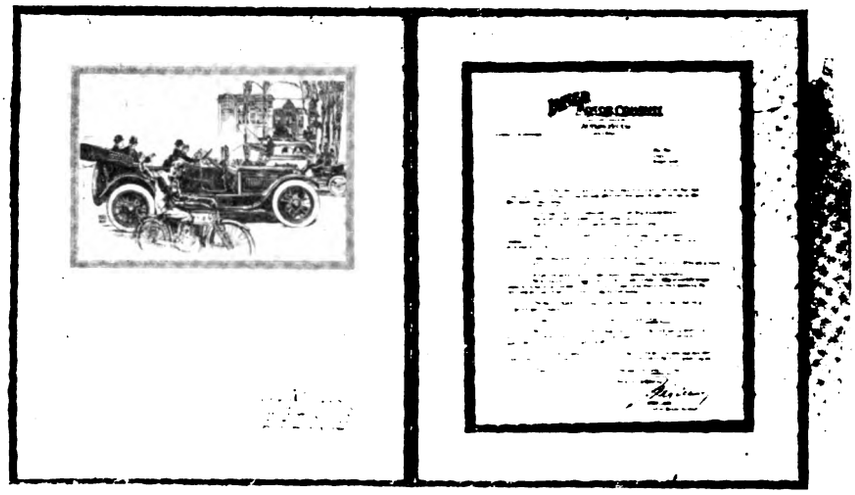
responds to a car speed of less than 10 miles an hour. After that it supplies current to the battery at practically constant voltage.

There has been very little change in the Cole big six as compared with the construction of the earlier series. The price has been reduced $135; it is now $2,465. The chief alteration is in the adoption of the vacuum feed fuel system.

The engine is an L-head, having six cylinders, 4¼ x 5¼, with cone clutch and three-speed gearset as a unit, the power plant being suspended at three points. The wheelbase is 136 inches and tires are 36 x 4½ inches. In addition to the equipment carried by the little six the big six is provided with a Taylor Noil motor-driven tire pump. An oil sight feed is set flush in the cowl board and the outfit of tools is carried in a drawer under the front seat. The rear doors in this car are 26 inches wide. The bodies include a roadster, six- and seven-passenger touring, coupe and limousine.



CYLINDERS AND UPPER HALF OF CRANKCASE ARE CAST TOGETHER



OPPOSITE EACH "TIPPED IN" LETTER WAS A BEAUTIFUL PICTURE

Dealer Cooperation on Large Scale

Lozier Mails Series of Expensive Letters.

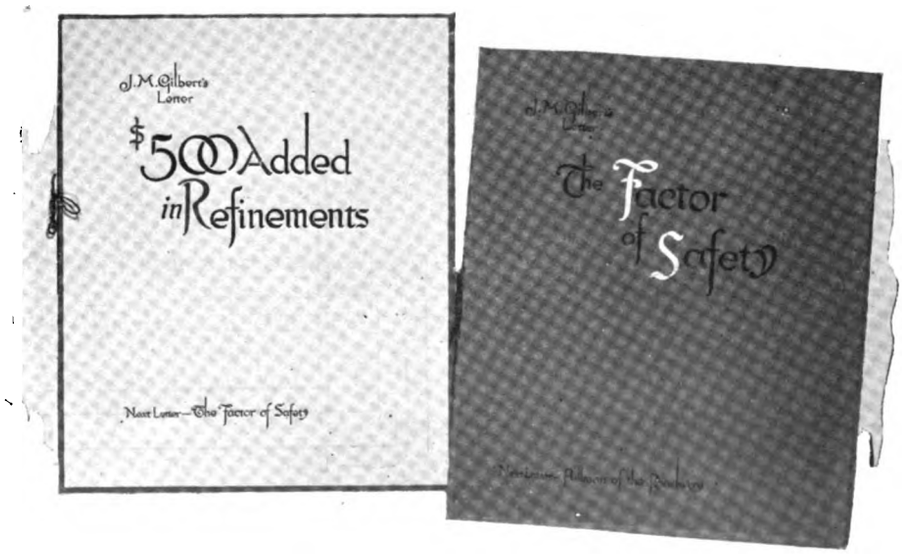
Dealer cooperation on an elaborate scale has been a part of the spring sales campaign of the Lozier Motor Co., Detroit, Mich. The company has been sending to the dealers' prospect lists a series of eight letters by President J. M. Gilbert, mailed weekly, the letters being an expensive and "classy" series.

They were arranged in logical order. The letters were tipped into a 15 x 12½-inch, eight-page, deckle-edge folder, printed on four pages only. Opposite each letter was a picture, alternately a line-cut and a four-color lithograph. Each portrayed a scene in which the Lozier was in the foreground. The lithographs constituted a series, "The Flirtation," "The Courtship," "The Wedding" and "The Honeymoon."

title and at the bottom the title of the next letter, thus linking the units of the series. The letters were:

"The Demand for Lighter Cars," "Power Without Noise," "$500 Added in Refinements," "The Factor of Safety," "Pullman of the Roadway," "The Car That Stays Good," "I Am Corroborated," "$1,000 Saved in First Cost." The back cover carried, "Lozier, the Choice of Men Who Know."

The dealers were asked to send in prospect lists to which they wished the service mailed and this is still being done. The letters were in mimeograph to match a company typewriter and the dealer's name and street address was typed in at the bottom of each letter and his telephone number at the bottom of every other letter. When the telephone number was not given a return



FRONT COVERS OF TWO LETTERS—EACH ANNOUNCED THE NEXT TO COME

The front page of each folder carried in its upper left-hand corner, "J. M. Gilbert's Letter." In the center was the demonstration card was attached so that the dealer could check up returns—for he was charged a certain sum per name.

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Advanced Maintenance

REPAIRING GASOLENE TANKS

By George Fernwell

The repairing of leaky gasolene tanks is not an easy job. Probably no two jobs of the kind are identical. An expert knowledge of soldering and a good supply of ingenuity are needed in most cases.

Mr. Fernwell, who is the author of this series of articles on "Advanced Maintenance," is a practical repairman, who has obtained his experience in the school of hard knocks. He has made all the repairs he describes here. And because he has made them all he can tell you how to go about the work properly.

Has he told you everything you want to know? Has he made everything clear? What is there that you do not understand? What questions would you like to ask?

We are here to serve you.

Ask us—it won't cost anything.

We will assume that we have for repair a gasolene tank which has not only been severely dented, but also has one or more of the supporting or suspending brackets broken so as to require replacement. Unless it should be decided, as is very often the case, to replace the damaged tank with a new one, there is no alternative but to remove one one end of the tank. Obviously it is necessary to do this in order to be able to extract the rivets which hold the broken bracket to the tank and also to rivet a new bracket in place.

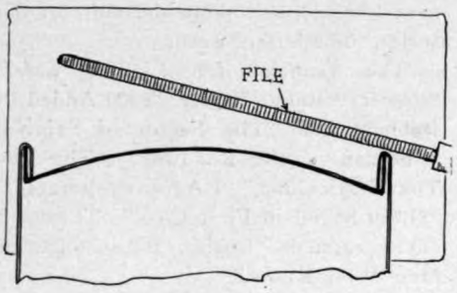


FIG. 1—FILING THROUGH BEND OF TANK SEAM, CUTTING OFF FOLDED PART AND PERMITTING REMOVAL OF HEAD—THIS CAN BE DONE ONLY WHEN TANK CAN BE SHORTENED HALF AN INCH AT LEAST

Before proceeding by any method to remove the head of the tank, the precaution should be taken of marking distinctly the position of the head with relation to the body or shell of the tank.

The marks referred to will later serve as a guide when replacing the head so that the two heads shall not be twisted relative to each other. Especially does this apply if the tank is one which has been badly crushed and reshaped or straightened.

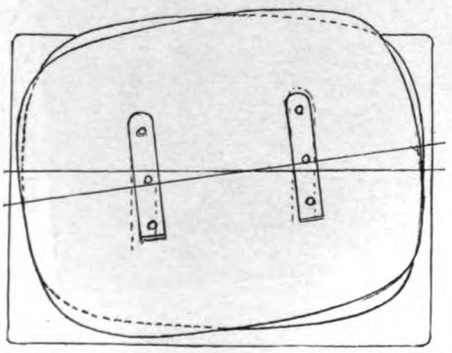


FIG. 2—TANK HEADS REPLACED IN TWISTED RELATIVE POSITIONS—THIS MAY HAPPEN AFTER RE-SHAPING A CRUSHED TANK

Unless an unusually thorough job should have been made of reshaping such a damaged tank, it is quite likely the only position in which the head can be reinserted is one in which the heads are twisted somewhat. Under these conditions it would be necessary to use considerable force to twist or rotate the head within the shell so as to bring it in line with the opposite end.

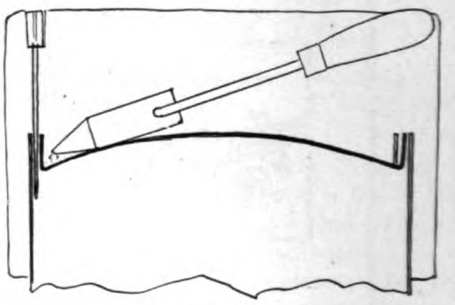


FIG. 4—AFTER SEAM HAS BEEN FILED THROUGH SOLDER IS MELTED BY APPLYING HOT SOLDERING IRON AND SURFACES SEPARATED BY INSERTING KNIFE—CAN BE DONE ONLY A FEW INCHES AT A TIME

Figure 2 shows a means sometimes adopted to force the inserted head into line with the head at the other end of the

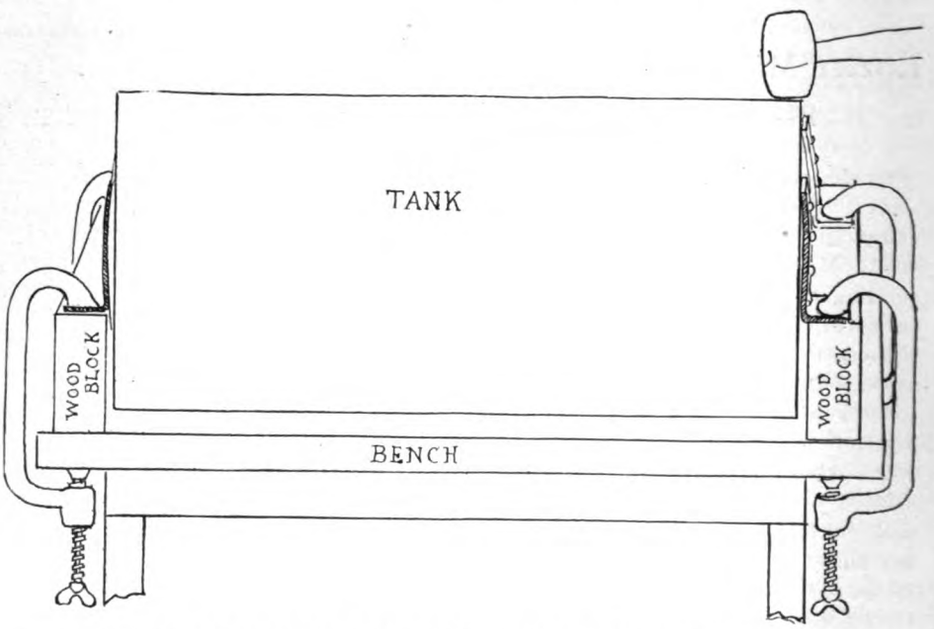


FIG. 3—METHOD OF FORCING TANK HEAD INTO ALIGNMENT—TANK ON BENCH WITH BRACKETS CLAMPED TO BLOCKS AND DRAWING HEAD INTO PLACE—CLAMPS ARE TIGHTENED AND EDGE OF TANK STRUCK WITH A MALLET ALL ROUND—CLAMPING AND STRIKING ARE REPEATED UNTIL HEAD IS IN PLACE

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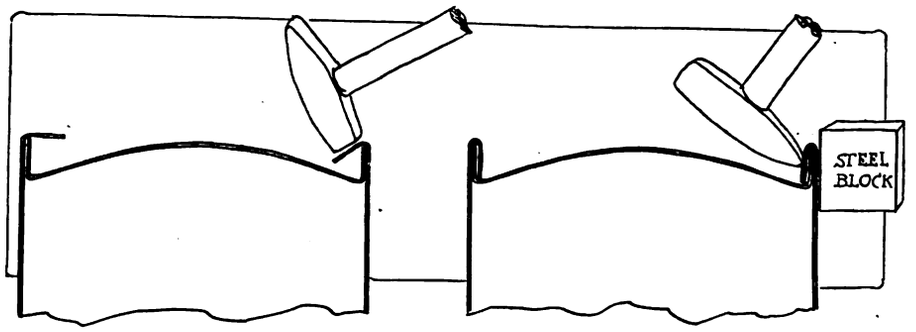


FIG. 5—FORMING NEW SEAM WHEN REPLACING TANK HEAD—EDGE OF TANK IS HAMMERED OVER STEEL BARS AND BLOCKS UNTIL CLOSED TIGHTLY

tank which has not been removed from its place.

To remove the head from the tank without destroying it, it is sometimes permissible to shorten the tank about half an inch. In that case the following means may be employed:

Removing Soldered-in Head.

Fig. 1 shows that the head has a perpendicular flange or rim at its periphery and that the sheet metal shell of the tank is bent or folded over the rim of the head, pressed or hammered into close contact with the latter and heavily soldered. Clearly it is no use to attempt to melt the seam between the head and the shell with a soldering iron, because it is necessary to heat the entire circumference of the seam simultaneously to remove the head without injury to the head or seam. A blow-pipe could be used for the purpose somewhat effectively, but there is some risk of a fire or an explosion occurring when using the blow-pipe.

By filing the seam all around the end of the tank along the line where the shell of the tank is bent or folded over the rim of the head, a very heavy soldering iron may then be used to melt the solder in the seam from one to two inches at a time, inserting, when the solder is completely melted, a knife or other slender steel tool so as to separate permanently the soldered surfaces.

Brackets to Support Head.

This process of melting one or two inches of the soldered seam with the soldering iron and separating the surfaces with a knife may be repeated continuously until the head is entirely separated from the shell of the tank, when, of course, it may be removed at pleasure.

Upon reinserting the head after the necessary repairs or straightening has been completed, the head must be inserted so that the perpendicular rim at its extreme outer edge is pushed further within the shell about three-eighths or one-half an inch from the extreme end.

It is necessary to bend or fold the projecting portion of the shell over the

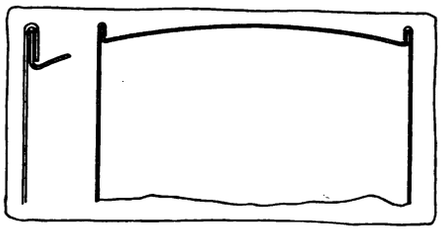


FIG. 6—TYPE OF SEAM EMPLOYED IN HOLDING TANK HEAD IN PLACE

rim of the head exactly in the same manner as the original seam. As there

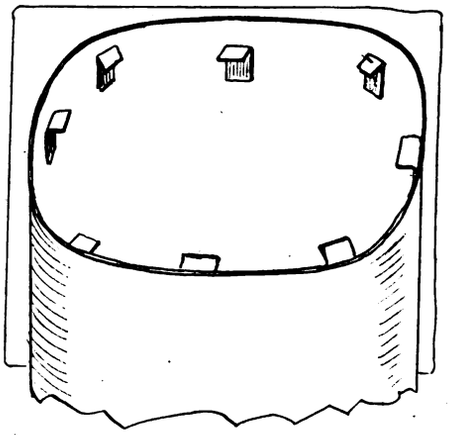


FIG. 7 — TINNED IRON OR BRASS BRACKETS SOLDERED TO INSIDE OF TANK TO SUPPORT HEAD WHILE FORMING SEAM

is nothing to support the head to keep it from being driven within the tank too far during the process of bending the projecting portion of the tank over to form the seam, this method of repairing requires that a means of support be provided before inserting the head.

A fairly effective means of doing this is to scribe a line parallel with the extreme end of the shell and on the inside surface of the tank so as to correspond with the level of the underside of the head when inserted. Make from six to eight strips of tinned iron or sheet brass bent to right angles and solder them at regular intervals to the inside surface of the tank so as to coincide with the scribed line.

Folding and Soldering Seam.

The head may then be reinserted in the tank so that it rests upon the sheet metal angle strips. With a light hammer or mallet and various pieces of steel bar a half-inch in thickness, filed to suit the varying curvature of the body of the tank, the extended portion of the tank may be gradually and carefully folded completely over the perpendicular rim of the head and finally hammered close so as to be almost pressure tight without the aid of soldering.

The seam may then be thoroughly sweated with solder and afterwards loaded with a fillet of solder all around the seam.

Reo to Add to Factory Buildings.

The Reo Motor Car Co., Lansing, Mich., shortly is to greatly increase its factory buildings. The additions will represent an increase of about 30 per cent. and will permit the company to produce approximately 12,000 cars next year. The new structures will be located on South Washington avenue.

Stearns Plans Factory Addition.

The F. B. Stearns Co., Cleveland, O., plans to erect a factory addition comprising approximately 250,000 feet of floor space. The company has secured title to several large parcels of land just west of the present factory on Euclid avenue.

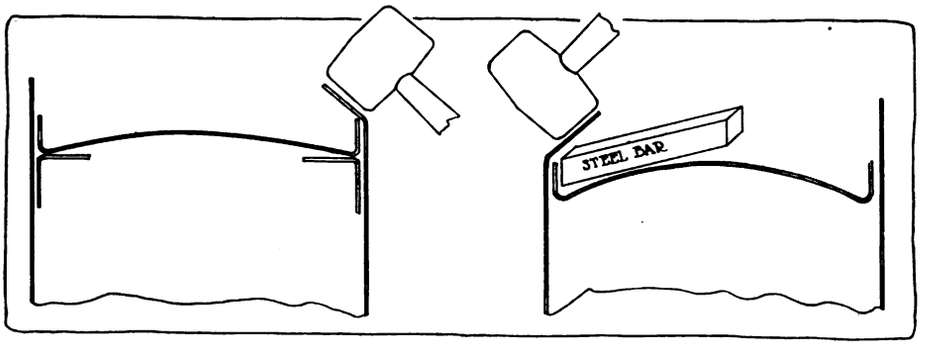


FIG. 8—EARLY STAGES OF SEAM-FORMING PROCESS, SHOWING HEAD SUPPORTED ON BRACKETS—METHOD OF USING STEEL BAR AND MALLET

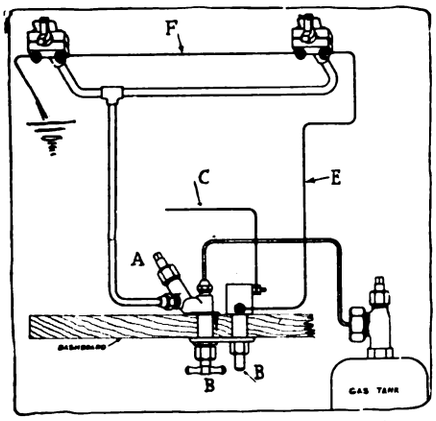
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RECENT DEVELOPMENTS in ACCESSORIES

Lifting Magnet For Small Work.

An unfortunate slip of the fingers may cause some small iron or steel part to be dropped into the crankcase or pan of a motor or the bottom of a gearcase, and the fishing necessary to get it out may take more time than many a repair job. To save such loss of time a small lifting magnet may be used, such as has been brought out by the J. & B. Mfg. Co., Pittsfield, Mass.

The magnet is mounted on a long stem that can be bent to any curve, and is connected to the source of current by a flexible cable which passes through the handle. The maximum lifting capacity is 5 pounds. The handle contains



IDEAL ELECTRIC GAS-LIGHTER

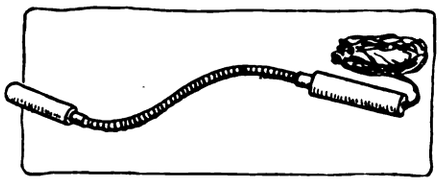
a switch, by means of which the current may be turned on just at the instant when it is needed, and waste avoided. The cable may be attached to the storage battery, which will give ample current for the purpose. The list price is $2.25.

Electric Lighter For Gas Lamps.

A gas lamp lighter of the type in which a jump spark at the burner ignites the acetylene gas when turned on has been brought out by the Ideal Brass Works, Indianapolis, Ind., and is supplied complete and ready to instal for $5, list price. The simplicity of the system and its installation are shown in the accompanying illustration.

There are two circuits controlled from the dash; the gas circuit and the electrical circuit. The gas is piped from the tank to the control valve on the dashboard and thence to the lamps, as shown. The gas is regulated not at the tank, but at the valve A, which limits the maximum flow; the valve B is opened full when the lamps are to be burned at full power.

The electrical circuit consists of a wire C, which is attached to a high-tension magneto lead or to the secondary terminal of a coil and led to one of the



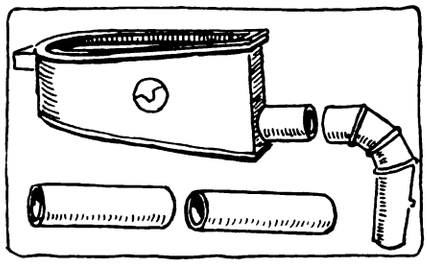
J. & B. SMALL LIFTING MAGNET

terminals of the push-button D on the dashboard, mounted with the gas valve; a wire, E, leading from the second push-button terminal to the sparking points on one of the headlight burners; a connecting wire, F, from one burner to the other, and a ground wire from the last burner.

To light the gas it is necessary only to turn on the gas by means of the handle, B, and then press the button, D, taking care, however, not to allow the gas to flow for more than a very brief time before producing the igniting spark.

Funnel For Use In Awkward Places.

An offset funnel and a set of tubes that can be used to carry water, gasolene or oil into tanks that are not provided with convenient filler openings, is

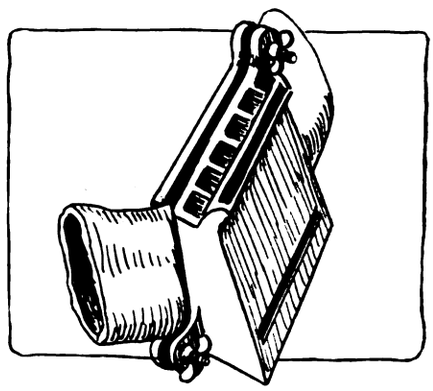


VOGEL OFFSET FUNNEL OUTFIT

manufactured by William Vogel & Bros., 47 South 9th street, Brooklyn, N. Y. The shape of the funnel is clearly shown in the accompanying illustration; it is made of galvanized iron, the galvanizing being done after the funnel is made up and lock-jointed. Two spout extensions, each 7 inches long, and a right-angle elbow provide means for reaching any sort of a filler. The extended length is 20 inches. A wire gauze strainer is placed over the outlet, and there is a hoop at the top for inserting a chamois. The body measures 6 x 9 x 11½ inches.

Tool For Facing Ford Valves.

The valves of a Ford motor can be cut down to a smooth, true surface without grinding by the use of a tool that is supplied for the purpose by the Liberty Tire & Supply Co., 102 Chambers street, New York. The device is extremely simple, as the accompanying illustration



POSITIVE STEAM VULCANIZER

shows, consisting merely of a frame to which are attached two guides for the valve stem and a steel cutter, which, when dulled by use, may be ground to a keen edge. The valve is rotated by a brace or, in fact, in any convenient way, the cutter removing sufficient metal from the surface to produce a smooth seat at the proper angle. The valve can then be ground into its seat in the motor with much less trouble than would be the case if the truing operation was not performed first. The list price of the tool, with cutter, is $2.

Small Steam Vulcanizer For Tubes.

Designed for tube repair work exclusively, the Positive steam vulcanizer manufactured by the Positive Supply Co., Davenport, Iowa, is so small as to be easily carried in the tool box, but is efficient and useful in the garage. It is provided with a special screw by means of which it may be attached to a post

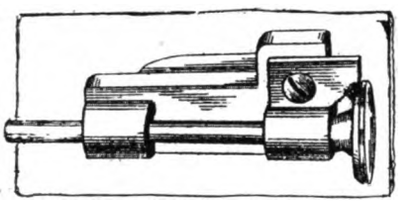
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in the garage, or to a fence or a tree by the roadside, or it may be simply set on a bench or box when at work. As is usual in devices of this type, there are two chambers, one for gasolene and the other, which is the one nearest the tube under repair, for water, so that the direct heat of the gasolene fire does not reach the work. The tube is held up against the heating surface by means of a plate attached by thumbscrews.

The whole outfit consists of the vulcanizer proper, the back plate with thumbscrews, anchor screw, measuring cup and enough tube repair material to do a considerable amount of work, all packed in a neat wooden box. The list price of the outfit is $1.50.

Pierce Governor On Continental Motor.

The governor manufactured by the Pierce Speed Controller Co., Anderson, Ind., is made in two styles, one designed to automatically regulate the speed of the motor in proportion to the road speed and therefore driven from one of the road wheels of the car, and the other to hold down the speed of the motor to



FACING TOOL FOR FORD VALVES

a predetermined maximum regardless of car speed. The latter type is the one shown in the accompanying illustration as applied to a Continental model N four-cylinder motor.

The controller proper consists of a fly-wheel governor enclosed in a dust-proof aluminum casing; it is connected to a butterfly valve in the intake passage and is driven through a flexible shaft coupled to a spiral gear on the pump shaft. As the motor speeds up the governor balls fly out and restrict the valve opening.

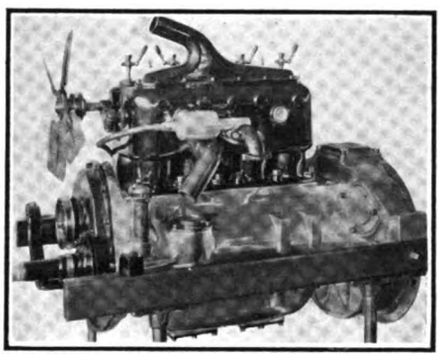
The governor may be applied in either vertical or horizontal position and may be driven in any convenient way. The illustration shows only one of many methods of installation.

Automatic Headlight Switch.

When the driver of an electrically lighted car makes a stop of any duration he frequently forgets, or does not bother, to turn out the electric headlights, regardless of the fact that they are drawing current from the battery and merely wasting it. An automatic switch designed to prevent such waste is manufactured by the Price Electric & Mfg. Co., Inc., Basic City, Va.

The switch is simple in construction and there is practically nothing to get out of order. Outwardly it is a rectangular block of black insulating material with a screw coupling for a small pipe in the center and on each side binding posts for the two wires from the headlight circuit. The device is attached to the engine side of the dashboard with the pipe running into the intake manifold; the headlight circuit is tapped in any convenient way and the two wires attached to the binding posts so that the switch is in series with the circuit.

The device is made up of two parts, as shown in the accompanying illustration, which are held together by the same screws that hold the whole to the dashboard. In the lower half is a hollow over which is placed a diaphragm of specially prepared leather that is heat- and oil-proof and impervious to air. The hollow under the diaphragm is placed



PIERCE GOVERNOR ON CONTINENTAL

in communication with the atmosphere through a small hole drilled edgewise through the plate. The other half, also hollow, carries a wide copper spring, the fixed end of which is in contact with one of the binding posts. The other binding post connects with a contact which lies just under the free end of the spring, which normally maintains a gap and remains off the contact.

When the motor is running the suction of the pistons, communicated through the manifold and the small pipe to the switch, draws the diaphragm against the copper spring, which is forced against the second contact, completing the headlight circuit. When the motor stops and the suction ceases the spring returns to its normal position, cutting off the supply of current to the lamps in the circuit.

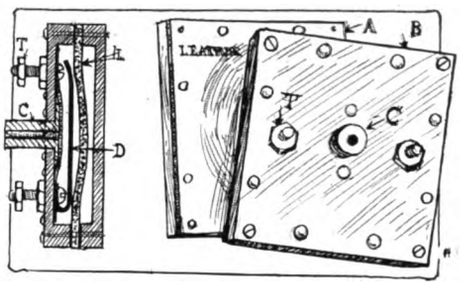
The switch can also be used in the horn or ignition circuit, as it is closed immediately the engine is cranked and there is a little suction in the manifold. It is easily installed by anyone and is out of sight and not in the way. The list price is $3.50.

Verges Making Pneumatic Clutch.

The Verges Mfg. Co., Milwaukee, Wis., has commenced the production of a pneumatic clutch for motor cars. It was designed by Henry A. Verges and operates through an air cock governed from the steering wheel. Engagement is effected by emptying an air chamber and disengagement by filling. The clutch is of a leather-faced cone type, not unlike the ordinary cone clutch in appearance. It is stated that several car builders are considering adopting the device. It will also be manufactured for private owners.

Pallau Steel To Make Springs.

Springs for motor cars and other vehicles will be made by the Pallau Steel Co., which has been organized in Mt. Clemens, Mich., with a capital stock of $75,000, of which $60,000 has been subscribed. A. T. Donaldson is president of the new concern; A. J. Pallau, vice-president, and Clifton D. Jackson,



PRICE AUTOMATIC HEADLIGHT SWITCH

treasurer and secretary. Pallau was for many years an official of the Detroit Steel Products Co.

Whitney Adds Ford Key Outfit.

The Whitney Mfg. Co., Hartford, Conn., is now prepared to furnish to the trade an assortment of its Whitney keys, especially prepared for Ford cars. The assortment consists of 12 different size keys packed in small boxes.

Detroit Men To Cut Gears.

Robert Wilde and Arthur P. Emmett, Detroit, Mich., are planning to organize the Michigan Gear & Engineering Co. for the purpose of making gear-cutting machines and tools. They also will cut gears and act as consulting gear engineers.

Telfor Tool Goes Into Parts.

The Telfor Tool Co., of Buchanan, Mich., is erecting an addition to its plant costing $100,000, making the total plant worth more than $400,000. The company will manufacture automobile parts.

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DISAPPEARING TOP ON NEW STEVENS-DURYEA ROADSTER

Changes in 1915 Models Are Confined to Body Improvements—New Auxiliary Seats in Big Touring Car.

With its six-cylinder chassis developed to a point where it offers little opportunity for betterment, the Stevens-Duryea Co., Chicopee Falls, Mass., has turned its attention to body improvements, and the most striking result is the production of the roadster shown in the accompanying illustrations. The chassis used is the standard 131-inch wheelbase chassis and the price of the machine is $4,450.

Perhaps the most conspicuous feature of the new roadster is the arrangement for stowing the top when it is not in use. In the body-work back of the seat there is a space into which the top folds snugly, so that it disappears completely; there is nothing to indicate that the machine is equipped with a top, the space being covered by upholstery. The same upholstery covers the empty space when the top is extended.

The top is of the one-man type, so constructed that when being opened or closed it always moves in a path to which it is confined by the peculiar arrangement of its joints. The front end attaches to the windshield while the rear end has a single bifurcated support on each side. The side curtains are of the quick attachable type; they can be put in place from the inside in a very short time. When not in use they are stowed in pockets formed between the top and its lining.

Full advantage is taken of the large space under the rear deck by using it for spare tire storage and for the gasolene tank housing. A full width door at the rear end gives access to the box, which will take in two tires mounted on rims or a complete wire wheel and an extra tire. With the tires so disposed of all worry on their account is eliminated.

Mechanically the car is the standard Stevens-Duryea, with 131-inch wheelbase. The unit power plant, which, with three-point support, was adopted by the Stevens-Duryea company early in the industry, is, of course, used.

The cylinders are of the L-head type, cast in pairs, 4⅜ x 5½ bore and stroke, giving a horsepower of 45.9 according to the S. A. E. formula. A chassis with a longer wheelbase also is built, the axle-to-axle distance being 138 inches; this chassis carries a motor that is a duplicate of the one mentioned except that the bore is 4 7/16 inches, a sixteenth larger than the other.

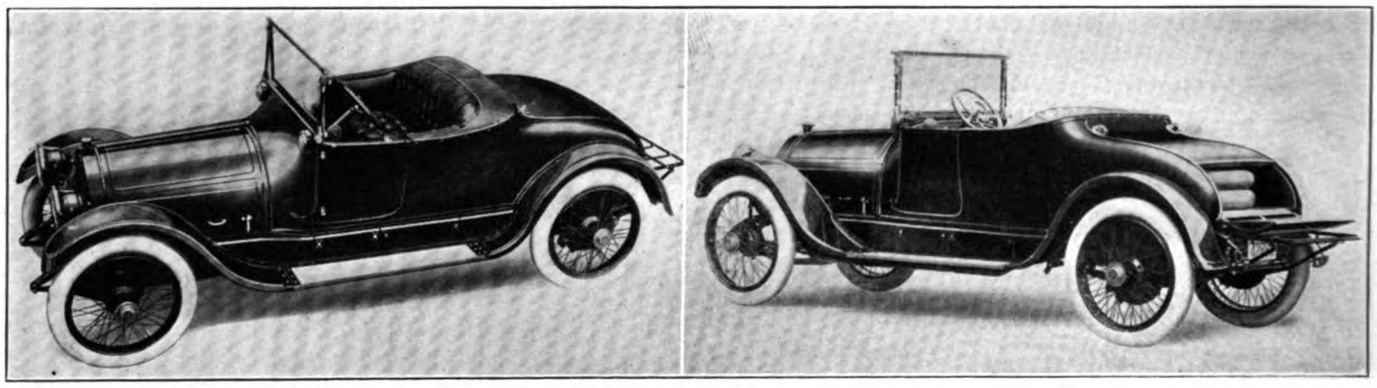
Ignition in all cases is by Bosch magneto and battery system, employing two separate sets of plugs. The carburetter is a Stevens-Duryea product and is water jacketed. Lubrication of the main bearings is effected by pressure feed, the overflow running into the splash troughs.

Between the motor and gearset there is a dry multiple disk clutch, a Stevens-Duryea feature of long standing; the gearset provides three speeds and is controlled by a central lever. The rear axle is of the full floating type and the rear springs are underslung.

Electric lighting and starting are effected by means of a Delco system, the motor-generator unit being mounted on the right side of the clutch housing. A convenience that is fitted as standard equipment is a power-driven air pump which is thrown into and out of engagement by a lever in a little compartment on the right side of the car.

Apart from the new features in the roadster, the other cars have been altered only in a few details here and there. In the seven-passenger touring cars a new type of auxiliary seat is employed. Each seat has an upholstered arm on the inside, the upholstered edge of the rail on the opposite side providing a second arm rest. The seats can be folded backward and sideways when not in use; or they can be folded flat and swung in front of the doors, providing a little extra knee-room for the occupants of the rear seat.

In all cases equipment is more than usually complete. Touring cars have all the usual outfit, as well as power air compressor, tonneau and extension lamps, both bulb and electric horns, Yale locks for tire carriers and storage compartments, and other conveniences. To the enclosed models are added pillar, dome and disappearing corner lights, electric telephone, glove tray and mirror, water and toilet bottles, card case, flower case, watch in case, notebook and numerous other little luxuries.



STEVENS-DURYEA ROADSTER SHOWING DISAPPEARING TOP AND REAR TIRE COMPARTMENT

MAIN POINTS OF STEVENS-DURYEA 1915 ROADSTER

Price	$4,450
Color	Optional
Make of motor	Stevens-Duryea
Number of cylinders	Six
How cast	Pairs
Shape	L-head
Bore	4⅜
Stroke	5½
S. A. E. horsepower	45.9
Magneto	Bosch
Carburetter	Stevens-Duryea
Starting-lighting	Delco
Clutch	Dry multiple disk
Wheelbase	131
Tires	4½ x 37
Wheels	Wood
Steering	Left
Control	Left
Type of rear axle	Floating

Options: Color.

Equipment: Top folding into body, side curtains, windshield, tonneau and instrument board lamps, extension lamp, speedometer, clock, headlight dimmer, electric horn, bulb horn, gasolene gauge, primer, trunk rack, extra rim, tools, pump, jack, etc.

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LIGHT ROADSTER FOR $495 LATEST PARTIN MACHINE

Has Block Motor, Cone Clutch and Three-Speed Gearset—Equipment Includes Gray & Davis Lighting.

A new car which belongs in the light car class but has the standard tread of 56 inches and not a few big car features has been brought out by the Partin Mfg. Co., Chicago, at $495 with full equipment, which includes a Gray & Davis electric lighting system.

Modern lines mark the two-passenger body, which is of the roadster type. Mechanically the machine is of conventional design throughout, having four-cylinder block cast motor, cone clutch, three-speed selective gearset mounted as a unit with the rear axle, which is of the full-floating type, channel steel frame and three-quarter elliptic rear springs. The wheelbase is 96 inches.

The motor, which is hung on a three-point suspension, has cylinders 2¾ x 4, the S. A. E. rating being 12.1 horsepower. The crankcase is of aluminum in one piece, with an oil reservoir of aluminum bolted to the bottom. At the top the water space is covered by a removable casting which includes the uptake pipe for the thermo-syphon circulating system.

Valves are on the left side and enclosed; the camshaft is made with integral cams. The crankshaft runs in cast bronze bearings with anti-friction metal lining. The pistons are fitted with three rings each and are ground to a finish, as are also the cylinders. Oil is circulated by a plunger pump which maintains a constant level in the splash compartments. Ignition is by the Atwater-Kent system, the current being taken from the lighting battery.

Through the cone clutch, which has a leather facing and is provided with adjustable pick-up bearings, power is transmitted to a bare propeller shaft and the gearset on the rear axle. The gear shafts run on Hyatt roller bearings and the driving pinion is adjustable as to mesh with the bevel gear.

The rear axle is of the full-floating type, as has been stated, and the live shafts have only to turn the wheels, which are mounted on the housing. Annular ball bearings are fitted at the outer ends of the axle; the bearings at the differential are Hyatt roller bearings. A large removable plate on the axle gives access to the differential. The front axle is steel of I-beam section.

Channel steel 3 inches deep is used for the frame; the rear springs, three-quarter elliptics, are 41 inches long and the front springs 32 inches long. There are the usual two sets of brakes for emergency and service use, operating on 10-inch drums; they are equalized and adjustable. Drive is through radius rods, and a torque bar takes the torque reaction stresses. The wheels are of wood with 12 spokes. The steering wheel, operating a worm and gear, is on the left side of the car, with gear and emergency levers in the center.

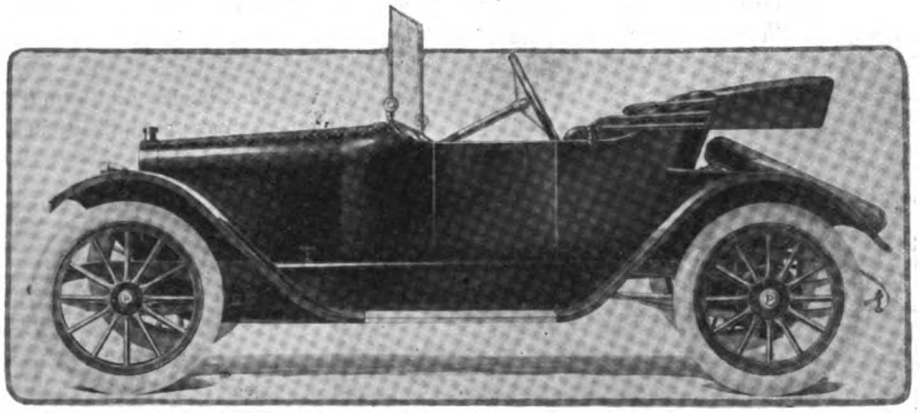
Annealed sheet steel sheathing over a wood frame is used in the body work. The conventional type cowl houses the gasolene tank, and carries the instrument board. The hood, radiator, mudguards are painted black and the body and wheels gray.

Regular equipment includes Gray & Davis electric lighting system, with generator and storage battery, top with side curtains and envelope, windshield, electric horn, tools, pump and jack.

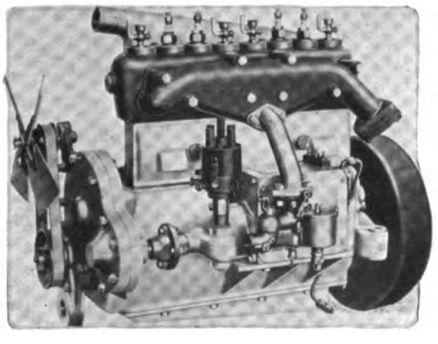
PARTIN-PALMER "20" LIGHT CAR SPECIFICATIONS.

Price, roadster	$495
Color	Black and gray
Number of cylinders	Four
Shape	L-head
How cast	Block
Bore	2¾
Stroke	4
S. A. E. horsepower	12.1
Ignition	Atwater-Kent
Lighting system	Gray & Davis
Clutch	Cone
Gearset	3-speed
Wheelbase	96
Tread	56
Steering	Left
Control	Center
Type rear axle	Full floating

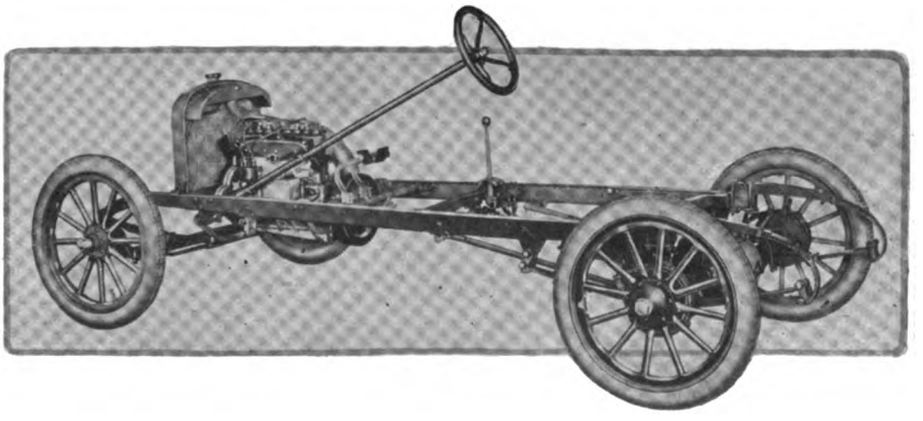
Equipment: Top, side curtains and envelope, windshield, electric horn, electric lighting system, tools, pump and jack.



PARTIN-PALMER LIGHT ROADSTER—PRICE $495 WITH ELECTRIC LIGHTS

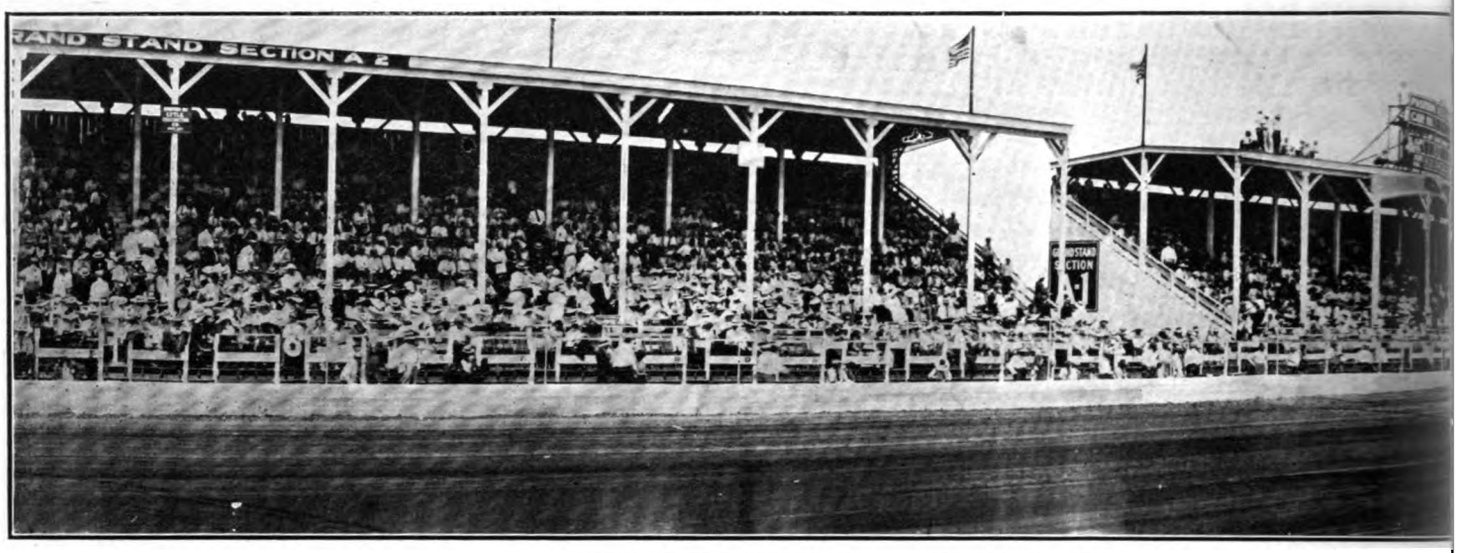


BLOCK MOTOR—CYLINDERS 2¾ x 4



CHASSIS WITH GEARSET A UNIT WITH FULL FLOATING REAR AXLE

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VIEW OF THE "STRETCH" ON THE SIOUX CITY TWO-MILE SPEEDWAY WITH

RICKENBACKER WINS THE SIOUX CITY 300-MILE RACE

(Continued from page 6.)

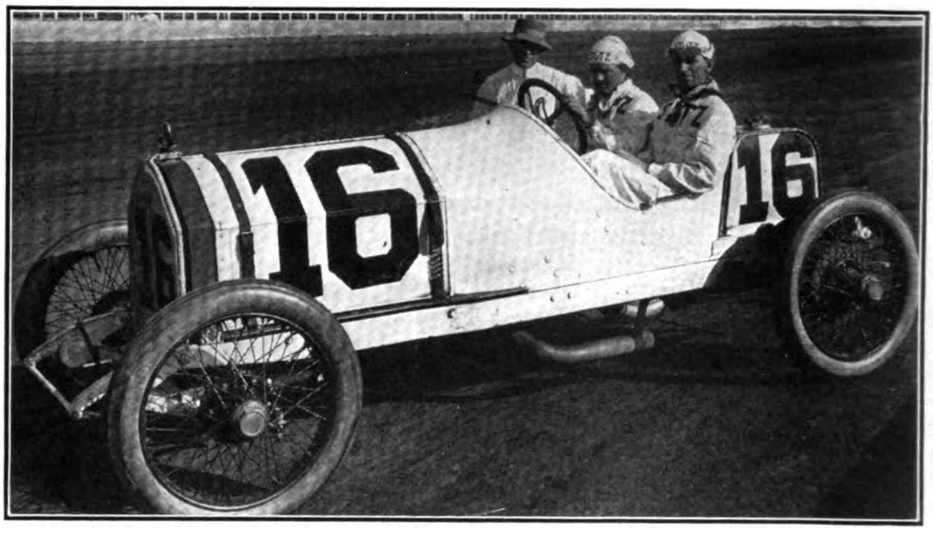
At the outset it looked as if the race would be a runaway for Bob Burman. The American speed king, in the Peugeot Jules Goux drove this year at Indianapolis, made his bid right at the outset. Being in the first row he soon jumped away from Anderson and Mason and swung by the tape for the first time with a fairly comfortable lead. The second time around saw this increased to almost a half-mile, for as he crossed the tape the closest to him was Anderson in the Stutz, who also had opened up on the others, leading Wishart by a few car lengths.

Burman Early Took the Lead.

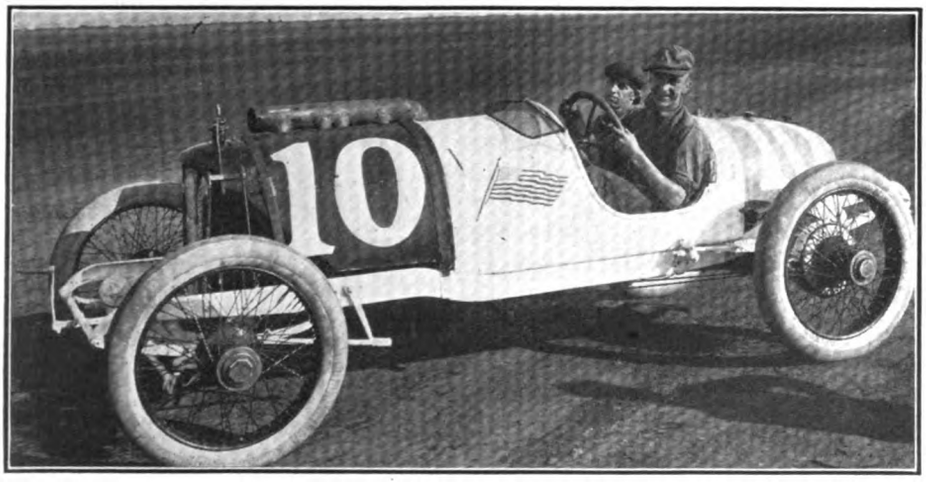
Burman, once out in front, settled down to a steady grind, while Wishart became runner-up, leading Mulford by about 100 yards. Anderson, Oldfield and Patschke were in the next group, while the others were well spread out, with Chandler bringing up the rear. Burman had the satisfaction of leading at the first 20-mile post, but Wishart had been sticking to his task and he was gradually eating up the distance that separated him from Burman. The Peugeot driver apparently was not getting as much speed out of his mount as he had at the outset. It was noted that there was a miss on the Peugeot that slowed it and Wishart caught his man when Burman stopped in the thirty-second mile to change a tire and to make a carburetter adjustment.

Wishart was the leader at 40 miles, with Stringer runner-up and Rickenbacker in third place. Grant was fourth and Patschke fifth. The Mercer star also led at 60 miles, but Rickenbacker had gone to second and Anderson to third. There only was 17 seconds between first and second, however. At 80 miles Wishart and Rickenbacker were tied and Alley in the other Duesenberg was third, with Anderson fourth. The same order prevailed at 100 miles, with Wishart just 1 second to the good.

At 189 miles Rickenbacker climbed out in front, and once there he never relinquished his advantage. Knipper was back to second, but at 200 miles Wishart had ousted him from there and on to the end it was a duel between the Rickenbacker Duesenberg and the Wishart Mer-

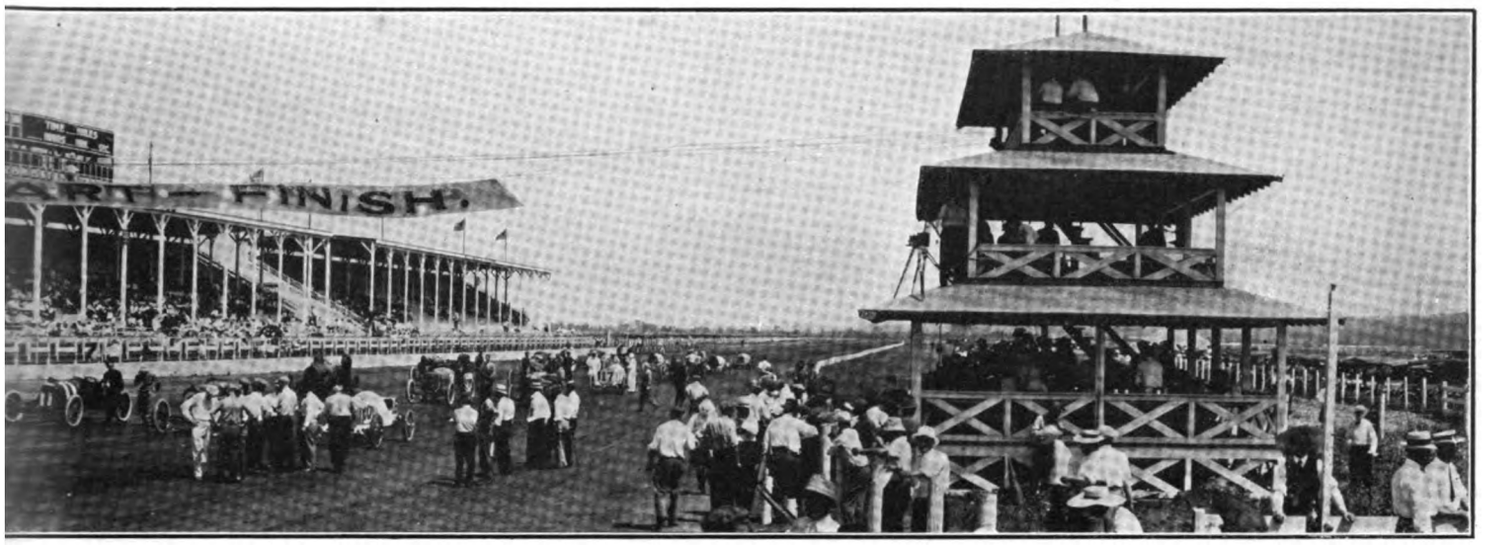


ANDERSON, FIFTH PLACE WINNER, IN HIS STUTZ



RICKENBACKER (DUESENBERG) WHO CAME HOME FIRST

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-GLIMPSE OF THE THRONG IN THE GRANDSTAND THAT WITNESSED THE "LINE-UP"

cer. The two pulled away from their rivals and each was waiting for something to happen to the other fellow. Rickenbacker's knowledge of the track, where he has raced for the last two years, stood him in great stead, and the way he took the turns picked up many seconds for him. Both men were in the same lap when Starter Fred Wagner took his collection of flags across the track. Rickenbacker got the checkered bunting first, then had to go two more laps to play safe on the scoring.

With the two leaders out of the way, the balance of the field settled down to fight for the rest of the prize money. No. 12 Duesenberg, the Anderson Stutz and the Patschke Marmon were running so closely that any one of them might have landed third, but the Duesenberg was the one to gain the position and back of it were the Stutz and Marmon in the order named. Then there was a long wait until Knipper and Wilcox could finish. They were far in the rear and back of them were the White and the Chalmers, all striving to finish because there were ten prizes. The officials waited on Knipper and Wilcox, but the other three were so far behind that in kindness to both the drivers and the spectators the officials flagged them, the Braender having finished 126 laps, the White 98 laps and the Chalmers 88.

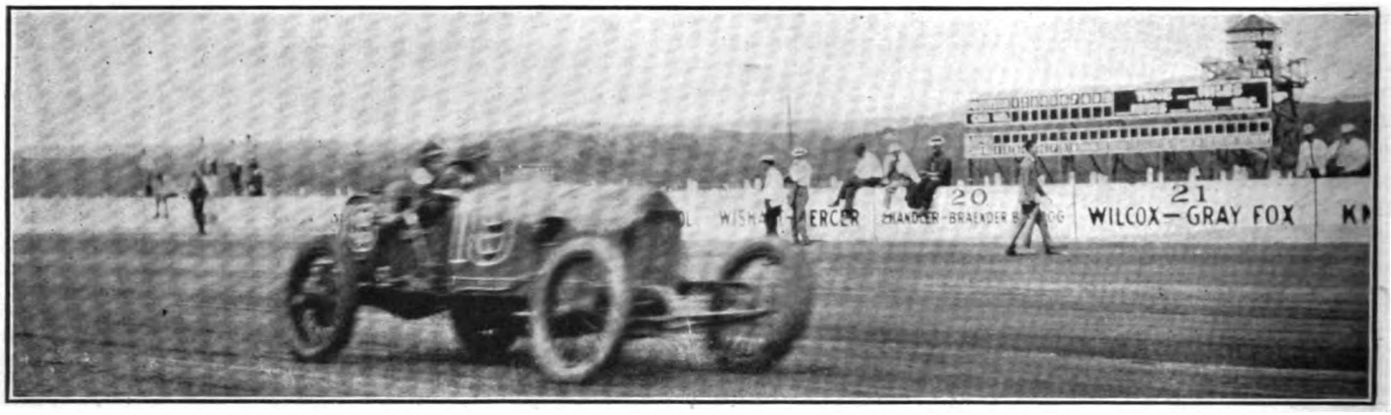
That Rickenbacker should have won this gruelling grind is not surprising in view of his record. He has driven in more races on the Sioux City track than any other man; he has broken several records there, including the 50-mile mark; he had a car that is surprisingly fast and built for just this sort of work, while his knowledge of the speedway gave him a great advantage. In addition, Rickenbacher had comparatively little trouble, making only two stops in the 300 miles. His first one was at 144 miles, when he lost 35 seconds changing a tire; again at 254 miles he stopped at the pits for 28 seconds while he took on gasolene and oil.

Wishart stopped longer at the pits, docking on three different occasions. The first time was at 150 miles, when he used up 40 seconds taking on gasolene and oil. At 196 miles he was in for 8 minutes, replacing a valve spring,

Time for Each 20 Miles of the Sioux City 300-Mile Race

No.	Car	Driver	Miles: 20 / Laps: 10	40 / 20	60 / 30	80 / 40	100 / 50	120 / 60	140 / 70	160 / 80	180 / 90	200 / 100	220 / 110	240 / 120	260 / 130	280 / 140	300 / 150	M.P.H.
10	Duesenberg	Rickenbacher	15:59	31:34	46:58	1:02:36	1:18:19	1:34:03	1:49:40	2:06:43	2:21:48	2:36:40	3:00:00	3:02:28	3:18:45	3:33:47	3:49:02	78.6
19	Mercer	Wishart	15:22	31:09	46:41	1:02:36	1:18:18	1:33:49	1:49:20	2:07:35	2:23:09	2:38:35	.....	3:04:30	3:19:38	3:36:19	3:49:50	78.0
12	Duesenberg	Alley Mulford	16:31	32:46	47:37	1:03:31	1:19:11	1:33:15	1:50:33	2:08:43	2:24:12	2:44:41	2:57:02	3:12:47	3:28:50	3:44:53	4:02:10	74.9
1	Marmon	Patschke	15:50	31:42	49:00	1:04:25	1:19:50	1:35:37	1:51:17	2:06:42	2:26:31	2:48:30	.....	3:08:32	3:24:57	3:44:09	4:02:56	73.0
16	Stutz	Anderson	16:19	32:48	47:33	1:03:44	1:19:40	1:35:36	1:51:41	2:07:30	2:25:40	2:47:11	.....	3:13:19	3:29:37	3:45:49	4:03:34	74.6
22	Delage	Knipper	16:14	32:23	48:14	1:04:14	1:19:57	1:35:26	1:50:53	2:06:19	2:22:00	.....	3:10:29	3:32:40	3:52:22	4:12:44	4:31:07	66.3
21	Gray Fox	Wilcox	16:23	32:19	48:10	1:05:35	1:21:18	1:51:52	2:07:46	2:23:56	2:45:12	.....	3:20:19	3:37:08	3:59:32	4:21:24	4:42:32	63.8
20	Braender	Chandler	17:11	34:19	51:25	1:09:03	2:12:19	2:21:12	3:20:46	3:37:58	3:54:48	4:48:14	Finished 126 laps. Time 4:58.19					
2	White	Shrunk	16:19	36:13	52:59	1:13:48	1:30:23	3:30:29	3:55:16	4:17:17	Ran 98	laps. Time 4:58.42						
5	Chalmers	Wetmore	18:22	39:07	1:03:08	2:05:59	2:34:05	3:28:07	4:13:06	4:39:23	Ran 88	laps. Time 4:56.21						
15	Sunbeam	Grant	19:25	36:00	52:32	1:09:13	1:25:49	1:42:30	1:59:06	2:17:17	2:33:06	2:44:37	3:00:00	3:17:03	3:33:51	Out, 13 broken	1 laps universal	
14	Sunbeam	Babcock	15:20	31:38	48:03	1:04:42	1:23:13	1:39:20	1:55:54	2:11:31	2:32:46	2:44:20	Out, 10 laps, broken cylinder					
17	Stutz	Oldfield	16:06	33:45	49:44	1:05:47	1:22:03	1:38:08	1:54:27	Out, 74	laps, broken connecting-rod due to burned bearing							
6	Peugeot	Burman	15:21	32:12	49:26	1:05:10	1:20:40	1:37:50	1:53:43	Out, 80	laps, broken connecting-rod							
7	Peugeot	Stringer	16:27	31:18	52:43	1:09:11	Out, 44	laps, broken connecting-rod										
9	Peugeot	Mulford	15:40	Out,	13 laps,	oil tank	broken											
11	Mason	Mason	Ran 3	laps, b	roken d	riveshaf	t											

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WISHART (MERCER) GOING GREAT GUNS, ONLY SECONDS BEHIND THE FLYING RICKENBACKER IN HIS DUESENBERG

and again at 274 miles it took him 50 seconds to make a tire change.

The track, though, stood up wonderfully. It had been predicted that it would be cut to pieces before 200 miles, but outside of a few rough spots on the turns it looked as good at the finish as it did at the start. It had been so well oiled that there was no dust and the speed of the big oval was shown by the fact that Rickenbacher averaged 78.6 miles per hour for the 300 miles.

Mulford Takes Alley's Place.

The race was not without its thrills, however, the greatest excitement being furnished by a gasolene fire at the Duesenberg pits. Tom Alley in No. 12 dashed up for supplies. An excited attendant splashed gasolene over the funnel while filling the tank, the spilt gasolene catching fire and igniting the contents of the can. The attendant threw the can into the pit and someone else heaved it back of the enclosure. It still was blazing and for a time it looked as if there might be trouble. Alley in his haste to get out of the car was singed by the flames, dirt got in his eyes and he was nearly blinded.

While the fire was being extinguished No. 12 was standing in front of the pit. Ralph Mulford, who drove for Duesenberg last summer and who had been eliminated from the race when the rivets came out of the oil tank on his Peugeot, saw Alley was incapacitated and jumped into the vacant seat. He did not inform the pit attendants of his intentions and before they knew it Mulford was again in the fray and pushing No. 12 to the limit. This was at the end of the 156th mile and Mulford was allowed to go on to the end, landing third place.

Leaky Tank Puts Mulford Out.

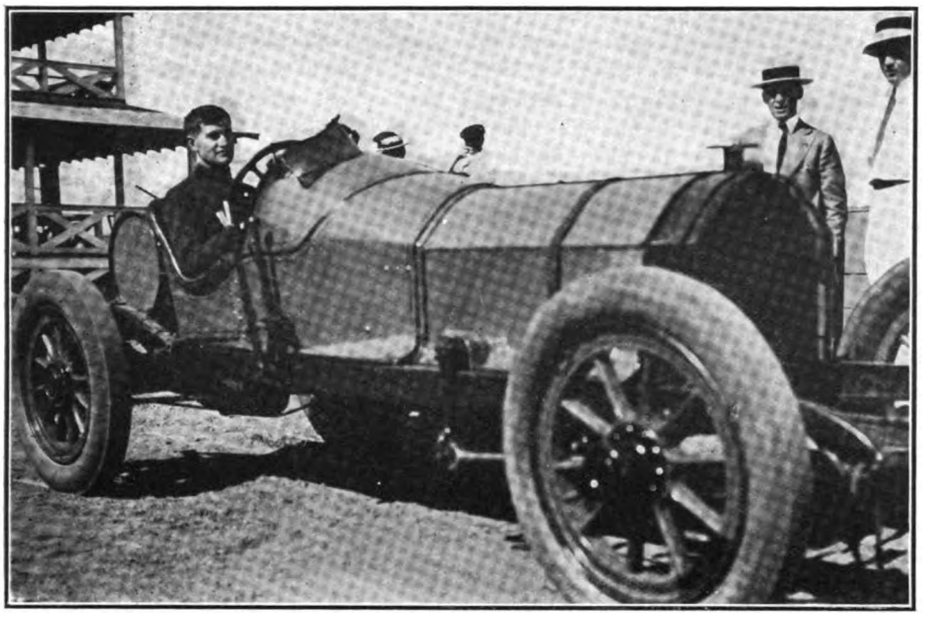
Mulford's elimination in the Peugeot came about in a peculiar way. One thing he evidently overlooked when he took over the car, which was the same Boillot had at Indianapolis, was to check up on the oil tank. Evidently the vibration at Indianapolis and Boillot's accident had loosened the rivets, and when Mulford opened up in the Sioux City race these rivets, or rather some of them, rattled loose and fell inside the tank, permitting the oil to escape. Mulford stopped and soldered things up as best he could, but a lap or so showed he was getting no

Specifications and Equipment of Cars Participating in the 300-Mile Sioux City Race

Car	Driver	No. Cyl.	Bore and Stroke	Disp.	Mag.	No. Dist.	Plugs	No.	Carb.	Size	Wheel-base	Gear Ratio	TIRES			Wheels	Oil
													Make	Front	Rear		
Marmon...	Patschke..	4	5.5x7	445.0	Bosch	2	Bosch	8	Schebler	2	120	2.6 to 1	Palmer	34x4½	34x4½	Houk	Monogram
White....	Shrunk....	6	4.16x5.75	474.5	Bosch	1	Bosch	6	White	2¾	112	2¾ to 1	Braender	35x5	35x5	Wood	Polarine
Chalmers..	Wetmore..	6	4x5.5	414.7	Bosch	2	Bosch	12	Rayfield	2¼	104	2¼ to 1	Michelin	32x4½	32x4½	Houk	Monogram
Peugeot...	Burman...	4	3.937x7.125	341.7	Bosch	1	Bosch	8	Master	2	....	3 to 1	Nassau	34x4½	35x5	R.W.	Castor
Peugeot...	Stringer...	4	4.25x7.875	446.8	Bosch	1	Bosch	4	Rayfield	2½	108	2 to 1	Batavia	35x5	35x5	R.W.	Castor
Peugeot...	Mulford...	4	3.9x7.08	341.7	Bosch	..	Bosch	8	Zenith	...	....	3 to 1	Firestone Braender Palmer	....	...	R.W.	Castor
Duesenberg	Rickenbacher	4	4.40x6.00	360.5	Bosch	1	K.L.G.	..	Schebler	...	106	2.6 to 1	Riverside	33x4½	35x5	R.W.	Oilzum
Mason....	Mason....	4	4.40x6.00	360.5	Bosch	1	Champion	..	Schebler	...	106	2.3 to 1	Riverside	33x4½	35x5	R.W.	Oilzum
Duesenberg	Alley.....	4	4.40x6.00	360.5	Bosch	1	K.L.G.	..	Schebler	...	106	2½ to 1	Riverside	33x4½	35x5	R.W.	Oilzum
Sunbeam..	Babcock...	6	3.1x6.0	270.0	Bosch	2	K.L.G.	12	Schebler	1¾	116	3 to 1	Palmer	34.6x4.7	...	Wood & Sankey	Castor
Sunbeam..	Grant.....	6	3.14x5.9	275.0	Bosch	2	K.L.G.	12	Claudel	...	83	3 to 1	Palmer	34x4½	...	Wood & Sankey	Castor
Stutz.....	Anderson..	4	4.8x5.75	416.2	Bosch	2	Bosch	8	Schebler	...	....	....	Silvertown	33x4½	33x4½	Houk	Monogram
Stutz.....	Oldfield...	4	4.8x6.0	434.3	Bosch	2	Bosch	8	Schebler	...	....	....	Firestone	34x4½	35x5	Wood	Monogram
Mercer....	Wishart...	4	4.8x6.2	445.0	Bosch	2	Bosch	8	Rayfield	...	112	2.5 to 1	Palmer	35x5	35x5	R.W.	Castor
Braender..	Chandler..	4	4.3x6.0	350.0	Bosch	2	Bosch	8	Rayfield	...	105	2.38 to 1	Braender	33x4½	35x5	Dunlop	Oilzum
Gray Fox..	Wilcox....	4	5x5.5	431.9	Bosch	2	Bosch	8	Rayfield	2½	96	2.3 to 1	Silvertown	34x4½	34x4½	R.W.	Castor
Delage....	Knipper...	4	4.1x7.08	380.2	Bosch	2	Bosch	8	Claudel	2¾	104	3 to 1	Firestone	34x4	35x4½	R.W.	Castor

NOTE.—All cars in the race were shaft driven.

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PATSCHKE AND THE MARMON THAT WON FOURTH PLACE

oil. Either the solder had choked up some of the leads or the loose rivets sad, for the mishap caused the docking of the Peugeot.

Also out of the ordinary was the trouble encountered by Shrunk with the White. His car was a stock machine, entered by the local agent, R. A. Bennett. The White was running nicely to the 108th mile, when a stop was made to replace a connecting rod bearing. This work was done in front of the pits and was a rather unusual job at a race meet. It took 65 minutes to do this and the White again was sent out. At 132 miles, however, it was docked again and this time it was necessary to replace the center main bearing. In all the White was out more than 2 hours, but Shrunk stuck to his job and was still running at 98 laps when he was flagged and given ninth place.

SOME TROUBLES THAT CAUSED LOSS OF TIME

Burman's elimination was brought about by oiling trouble. Evidently an oil lead failed to work and a bearing seized. This broke the connecting rod, pistons, etc., and poked a hole through the crankcase.

Wetmore, in the Chalmers, a local driver and a private entry, had considerable trouble, but like Shrunk he kept plugging along and landed tenth money. The hard work he had done at the pits, though, told on him, and although he is a big sturdy chap he collapsed immediately after getting out of his car and had to be taken to the hos pital tent for treatment.

Carburetter and valve trouble kept many of the cars in the pits for long periods and the oiling system of a few cars prevented the entries from continuing. The foreign cars especially had much mechanical trouble, and all but the Delage were put out of the race by the breakage of an important part. The Delage had a cracked cylinder but continued in the race, filling the water system every five laps to prevent overheating and consequent piston seizing.

Wishart Made Only Three Stops.

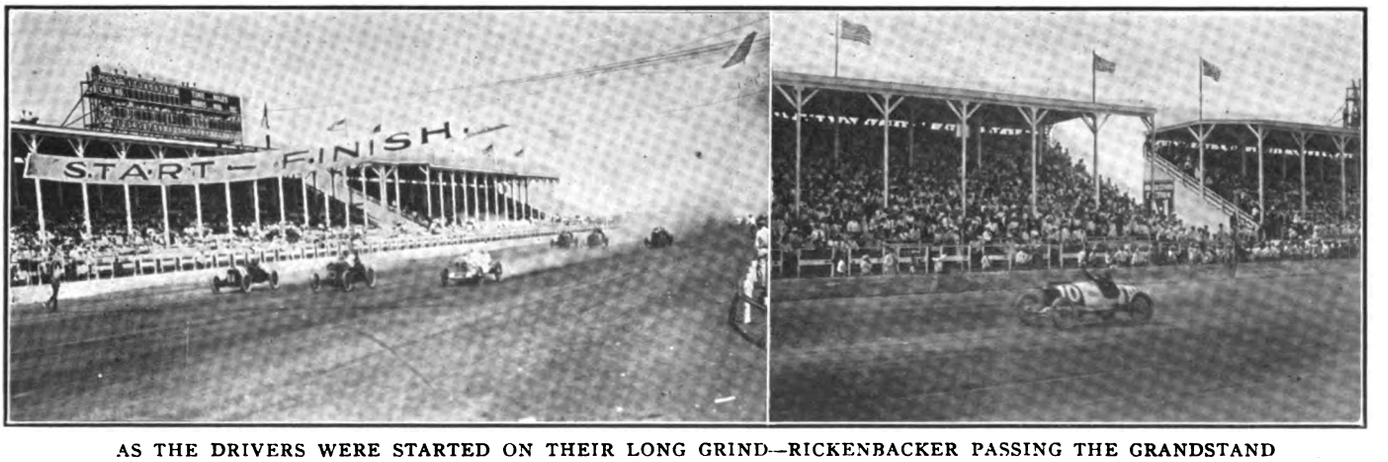
Wishart, second to finish, had to make three stops, two for supplies and one for a mechanical trouble. At 150 miles Wishart stopped 40 seconds to take on gasolene and oil. At 198 miles he stopped for a broken valve spring. It required 8 minutes to replace the spring.

Anderson, in a Stutz, stopped for 3 minutes and 9 seconds through the entire race. He first halted for gasolene and oil and the second time, just before the 112th lap to change the two right tires and take on gasolene. He had no mechanical trouble.

Four pit stops went against the Marmon, driven by Patschke, the total time lost being about 4 minutes. On his first stop, at the end of the sixth lap, he called for oil and gasolene and on his 89th lap for the replacement of a right rear tire. His next halt, on the 133rd lap, was made for carburetter adjustment and for water, while his last stop, four laps later, was made for additional water.

Knipper Makes Three-Cylinder Finish.

One of the remarkable performers of the day was Billy Knipper, in the French Delage, which was the same car driven by Thomas, winner of the Indianapolis race this year. Knipper made eleven stops, totalling 19 minutes, 15 seconds. His trouble started in the 99th lap, when cylinder No. 4 became cracked, allowing the water from the jackets to run out. The water was not pouring out and Knipper decided he could continue if he got sufficient water at frequent intervals. After changing a right rear tire and a spark plug in No. 4 cylinder he again started after almost 10 minutes delay. At the 107th, 111th, 116th, 121st, 126th, 130th, 134th, 135th and 140th laps, Knipper had to stop to fill with water



AS THE DRIVERS WERE STARTED ON THEIR LONG GRIND—RICKENBACKER PASSING THE GRANDSTAND

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for fear of burning up the motor.

Wilcox, driving the Gray Fox, took an unusual risk when he drove his last five laps without oil, not knowing that he would have finished in seventh position without any trouble had he made a stop. This car was brought to the pits first at the 50th lap for oil and water, and 8 laps later for gasolene, water and oil. A long stop was made at the 53rd lap to change three valves and take on water and gasolene.

Braender Breaks Oil Line.

Valve and push rod trouble made the Gray Fox come to the pits three more times, and once water was taken in, but no mechanical work done. The latter stop was at the 114th lap. A push rod broke at the end of the 119th lap and valve trouble at the 130th caused another halt, this time for 4 minutes, 15 seconds, while the former was for 2 minutes, 22 seconds. The last stop made was also for push rod trouble and it required 1 minute, 1 second to get the rod in shape.

Five stops had to be made by Chandler in his Braender Bulldog, the total time for them being 1 hour, 39 minutes, 3 seconds. The longest stop Chandler made was in the 40th lap, when the oil line broke, and after being repaired as well as possible it gave much trouble, necessitating stops at the 50th, 61st and 65th laps. At each of these the line was looked over and the break sealed. At all of these stops fuel and oil was supplied, much of the latter being necessary because of the leakage due to the break. The last stop, made in the 85th lap, was for 55 seconds to change a right rear tire. He was called by Starter Wagner while on his 126th lap.

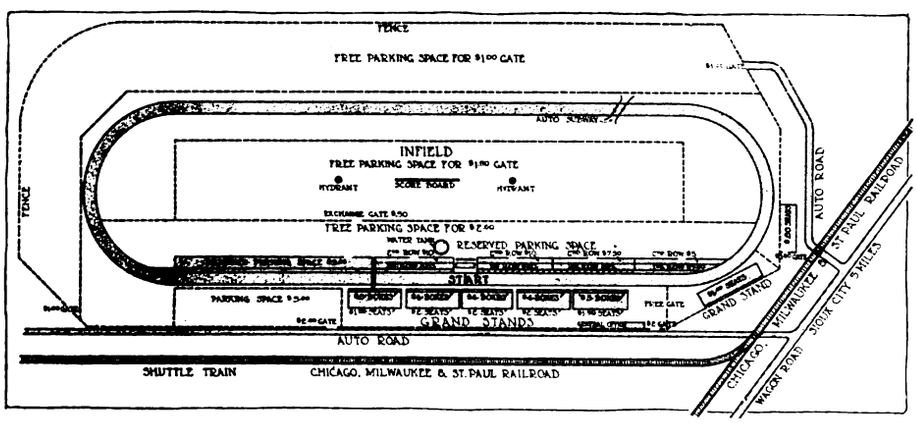
Wetmore's Luck Very Bad.

Another local car which ran in hard luck was Wetmore's Chalmers six, which made 13 stops, most of which were for what was supposed to be carburetter trouble. The first stop was made in the 5th lap to change a right front tire, then in the 17th for a right rear. The carburetter trouble began in the 23rd lap and it appeared that the fuel was full of water and dirt. The air line to the tank was giving trouble, also. After making adjustments the car continued, but the motor still misfired badly. Two more tire changes were necessary in the 32nd lap, both rear tires being taken off.

After continuing until the 53rd lap Wetmore pulled to the pits, and after considering the matter blamed the intake valve in No. 1 cylinder for the misfiring. After running a few laps the trouble again started and Wetmore came again to the pits and tried to readjust the valve, but after he ran a few laps the motor still acted queerly. Frequent stops at intervals of almost four laps were made and each time the carburetter was readjusted and the valve tappets examined and the push rods reset. The motor gave considerable trouble almost until the end of its journey, which ended in the 88th lap, when Starter Wagner called Wetmore off the track. He received tenth prize, amounting to $700.

Lack of Oil Put Burman Out.

One of the favorites of the day, Bob Burman, driving a Peugeot, was put out of the race in the 80th lap with a broken crankcase, connecting rod and piston, caused evidently by the seizing of a bearing. The bearing no doubt was not fed any oil, it seized, then bent the steel connecting rod, which left the crankshaft and punched through the crankcase. Burman made three stops before retiring, the first one in the 16th lap, when a left rear tire was punctured. His next was in the 57th lap for a new right rear tire and the next delay was caused by poor carburetter performance, necessitating the replacement of the needle.



MAP OF THE SIOUX CITY COURSE SHOWING LOCATION OF THE GRANDSTANDS, PARKING SPACES, ETC.

The second Stutz entry, driven by Barney Oldfield, made three stops before it went out of the race with a cracked cylinder. Barney's first stop was made in the 72nd lap for oil, water and fuel. His next was in the 73rd, when he came into the pits to clean the radiator, which was not cooling properly, and he also removed No. 4 ignition wire, thereby cutting out that cylinder, which contained the crack. He attempted to continue the race on three cylinders but had to come in on the next lap. He made the conventional "I'm out" sign by throwing up his hands.

The two Sunbeams, driven by Grant and Babcock, did creditable work up to the time of their retirement. Grant made two stops for right rear tires, and then on the 131st lap he broke a universal on the back stretch and he and his mechanician walked to the pits. His teammate, Babcock, made four stops. The first occurred in the 16th lap, when a right rear tire was changed. Two other tire changes were necessary and then the last tire blew in the 102nd lap, the car turning around completely a few turns leaving the machine facing the wrong way. To prevent any accident by crossing the track he reversed for almost a mile to the pits. Here it was found that the water hose to the radiator had burst and after being taped up the car continued only to go out in the 105th lap with a stripped driving pinion.

Sunbeams Did Creditable Work.

The second car to retire from the race was the Peugeot driven by Stringer. It broke a connecting rod right near the finish line while ending the 43rd lap. Previous to this a stop was made in the 25th lap for a right rear tire and considerable trouble was found in restarting.

The first car to leave the course was the Mason, with Mason driving. At the end of the second lap he came in, claiming no gasolene was flowing to the carburetter. He remained at the pits 30 seconds and after leaving went one lap and again came to the pits with a spark plug in No. 1 cylinder blown out. This was replaced and Mason only drove 50 feet when he broke the drive shaft and then had the car pushed off the course.

Tires won the race and the 17 drivers that divided the $25,000 prize money used up only 21 casings, amounting to less than $1,000 in value. Rickenbacker, who won, stated that tires would win the contest, and although the day was exceedingly hot, he went through the race with but a single tire change, this being made on the right rear wheel of his machine.

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COOPER, HUGHES, PARSONS WINNERS AT TACOMA MEET

(Continued from page 6.)

driver and mechanician were thrown and suffered cuts and bruises. Neither was fatally injured.

Earl Cooper, the meteor of the speed constellation, who in 1913 won the American championship through his consistent driving on the coast, never shone as brightly as he did today in the race for the Montamarathon trophy. Laying back for 42 laps, he shot the Stutz to the front after covering 84 miles and was never headed thereafter. His victory was decisive. His nearest challenger, Ruckstall in a Mercer, was six laps behind when the Stutz finished the 250-mile journey in 3 hours 24 minutes 34⅘ seconds, an average speed of 73.44 miles per hour.

With Cooper so far in front, interest in the race centered in the battle for second place between Ruckstall, the Mercer pilot; Klein, the King driver, and Dingley, at the wheel of the Ono. Until Dingley's car was wrecked on the 124th lap, he had a slight advantage on the other two contenders, as he was leading them by half a lap. With the Ono eliminated, the fight for second money narrowed down to a last lap spurt between the Mercer and King, and the yellow car got the decision by 2 minutes.

Two other cars of the 14 starters finished, Parsons' Frantz capturing fourth money and Taylor's Alco being forced to take fifth place consolation honors. Smyley's Hupmobile was running when the race was called.

Six cars that were nominated failed to appear when the field was sent away at 2 o'clock—the Romano, Chalmers, P. C. Special, Hudson, Italia and de Alene's Marmon. With the exception of the Marmon, which was wrecked in the Potlatch race of yesterday, no reason was given for the withdrawal of these entries.

Seven of the starters suffered mechanical trouble. All three Maxwells were eliminated before Cooper got the checkered flag, although two of them were in dangerous positions for the greater part of the race. Hughes, one of the Maxwell team, was overcome with the heat and was relieved by Carlson, who completed 103 laps before he was forced to withdraw his mount with a broken valve spring. Tetzlaff's Maxwell was a contender for 90 laps when it suffered a broken steering gear. Teddy crawled up to the pits with his mechanician, Benedict, astride the hood and holding the parts together.

Brock's Ray also looked dangerous and showed a world of speed until it was eliminated on the 84th lap with a broken frame. The two Fiats, driven by Verbeck and Sorrell, were the first to give up the chase, Sorrell driving but three laps and Verbeck withdrawing after making thirteen circuits of the course.

Hughie Hughes was the hero of yesterday's racing. The Englishman took the Potlatch trophy by a Garrison finish and led Klein's King across the wire by only 4⅗ seconds. The triumphant Maxwell covered the 200 miles in 2 hours 41 minutes 32⅗ seconds and averaged 74.28 miles per hour, shattering Earl Cooper's record of 71.07 miles an hour established in the 1913 event.

At the finish, Cooper was almost as close to Klein as the King driver was to Hughes and was a close third. Dingley's Ono was fourth, Ruckstall's Mercer fifth and Parsons' Frantz sixth.

Until it was eliminated on the 73rd lap, de Alene's Marmon was showing the way to the field. It went to the front at the end of the 23rd lap and was in front for 100 miles, having an advantage of 2 laps when it blew a tire and rolled over in the ditch. Cooper then assumed the role of pacemaker and was not overtaken until the 98th lap when Hughes thundered by the Stutz. On the 99th lap, seconds separated the Maxwell, Stutz and King. When almost on top of Hughes, Cooper blew a rear tire and this misfortune gave Maxwell the race and the King second money.

Ed Pullen, winner of the 1914 Grand Prize, failed to finish, but to him goes the honor for driving the fastest lap. Pullen sent the Mercer around the 2-mile course in 1 minute 22⅗ seconds, an average speed of 87 miles per hour.

Jim Parson's victory in the Intercity race of yesterday morning gave him perpetual possession of the challenge trophy. Parsons drove the 100 miles in 1 hour 21 minutes 29⅗ seconds and averaged 73.6 miles per hour for the century. Brock, in the Ray, was second, almost 10 minutes abaft the victor. Latta, driving a Lozier 100 miles without a single stop for tires or fuel, was a close third. Staley, in a Studebaker, was fourth, and Croston's Chevrolet was fifth. The Chevrolet also completed the entire century without a stop. The only other car to finish was Smyley's Hupmobile, which took sixth money.

Truck Convention For New York?

According to tentative plans there will be held in New York, some time during October, a convention of commercial vehicle interests, the purpose of which will be to further advance the excellent work that has been done during the past two years. The National Automobile Chamber of Commerce has the project in hand and it will be under the supervision of the Commercial Vehicle Department of that body.

The automobile committee consists of the following: William C. Poertner, president of Motor Dealers' Contest Association (chairman); Alfred Reeves and S. A. Miles, Automobile Chamber of Commerce; A. G. Batchelder, chairman executive board, American Automobile Association; William A. Sweet, general manager Motor & Accessory Mfgs., Inc.; Charles A. Stewart, general manager Automobile Dealers' Association; E. Lascaris, president Importers Automobile Salon; Elmer Thompson, secretary of Automobile Club of America; George Duck, president Motor Truck Club; Harvey Robinson, Electric Vehicle Association of America; Frank G. Webb, Long Island Automobile Club; Clifford M. Bishop, Brooklyn Motor Vehicle Dealers' Association; J. C. Nichols, treasurer Motor Dealers' Contest Association; David Beecroft, Class Journal Co.; Julian C. Chase, John C. Wetmore, Fred J. Wagner, Edward F. Korbel and M. W. Colwell.

Disbrow Day at Hawthorne

Chicago, July 5—Louis Disbrow and Eddie Hearne divided the honors in the dirt track speed carnival staged at the Hawthorne track yesterday and to-day by Alex Sloan and his Case racing crew.

Yesterday Disbrow took the 10-mile free-for-all and clipped two-fifths of a second off the track record by turning a mile in the Simplex Zip in 53⅕ seconds. He came back today and scored two victories, winning the 5-mile handicap from scratch in 5 minutes 9 seconds and the half-hour race, in which he covered 29 miles.

Hearne took two events on yesterday's card, winning the 5-mile open and the 5-mile handicap races. He captured the 5-mile race today and gave Disbrow a stubborn battle in the 5-mile handicap, losing by the narrow margin of 4 feet.

The 2-day meet attracted a crowd of about 5,000 daily and was run off without the semblance of an accident.

Clifford Sails For Australasia.

John E. Clifford will sail for Sydney, Australia, today, as general manager and sales director of the General Motors Co. in Australia and New Zealand. During the last two years Clifford was representative of the General Motors export department at the Buick plant, in Flint, Mich.

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Dealers' Opinions

To the Editor of Motor World:

In your issue of June 17, 1914, page 7, you print a statement by Messrs. Mauro, Cameron, Lewis & Massie, on the recent decision of the Court of Appeals in the Klaxon-Newtone suit, the text or pretext of which is that they think the statement of my views in Motor World of June 10 is likely to "mislead the public." This imparts to their statement a sort of "pro bono publico" flavor that the public will no doubt appreciate.

They say that "claim 15 was not in suit at all." This is true, but, as your records will show, the mention of claim 15 is your printer's error, and such error should not be permitted to distract attention from the fact that claim 16 of patent No. 923,048 is the only claim which the Court of Appeals specified as invalid.

They say, with reference to the decision of the low court sustaining the Klaxon patents, that "the federal court out in Detroit has already refused to follow it," whereas according to the official stenographer's report of the proceedings at Detroit, his Honor Judge Tuttle stated: "I am not going to decide this matter on its merits, because I cannot give it the time that would be necessary to do that . . . I will hear it at an early date on its merits if the parties so desire. . . . I have not the time nor won't have during the next two weeks to consider this case and to form an opinion as to the actual merits of it."

They argue that the "Newtone Superior" is not an infringement of Hutchison patent No. 1,094,403 because the original "Newtone" in evidence in the Klaxon-Newtone suit antedates the filing of said patent. The original "Newtone" has nothing to do with the matter. The "Newtone Superior" is a more recent model and of different construction. The "Newtone Superior," of course, embodies the same basic Klaxon principle as the original "Newtone," but the "Newtone Superior" contains also the improvement covered by the Hutchison patent referred to, whereas the original Newtone did not.

They say my statement "manifests a radical shifting of position" with reference to the basic Klaxon patents. In this the wish is no doubt father to the thought. Klaxons and Newtones, as well as Spartons, depend for their success upon the basic invention of the Klaxon basic patents, but there are many different separately patentable means for embodying the basic principle. Hence my statement that we have yet to issue many controlling patents for specific embodiments of the basic principle does not involve any shifting of position. It is merely calling attention to a situation that usually results where a basic invention has created a new industry.

The now pending suits on patents No. 883,643, granted March 31, 1908; No. 957,161, granted May 3, 1910, and Nos. 1,043,703 and 1,043,704, granted November 5, 1912, against the Sparks-Withington company, will be pushed quite independently of the suits on the main patents; cases against Sparton horn users in New York city on the main patents are set for trial before Judge Hough on September 11, and the Court of Appeals will be asked to re-hear the Newtone case when it convenes after the summer vacation.

There will be other suits under existing patents when we can get the time, and under other patents when we can get them issued.

New York, June 27, 1914.

Yours very truly,

GEORGE C. DEAN.

Zachmans Buy Hinson Company.

The C. & B. Hinson Co., Liddell and Grove streets, Cincinnati, O., has been purchased by E. P. and M. A. Zachman, who will continue the business but at a new location, 2917-19 Webster avenue. The company manufactures, among other things, endless fan belts for Fords. The former officers of the company were: President, C. Hinson; secretary and treasurer, B. Hinson; manager, S. R. Leever.

Stromberg Gets Preliminary Injunction.

An order has been signed by Judge Hand in the United States District Court in New York City, granting a preliminary injunction to the Stromberg Motor Devices Co. against the Longuemare Carburetor Co. The injunction restrains the defendants from alleged infringements of the Richard and Ahara patents.

Court Disallows Alpena Judgments.

Judgments secured a year ago by five creditors against the Alpena Motor Car Co., Alpena, Mich., have been declared void by Judge Tuttle in the United States District Court in Detroit and the five must refile their claims; the sheriff was enjoined from disposing of the property.

A petition in bankruptcy was filed against the company in February and this action is held prior to the judgments, even though they were secured six months previously. The five creditors who must refile their claims are: Spicer Mfg. Co., Herbert Mfg. Co., Abraham Aaronson, Apple Electric Co., and John Bornman & Son.

Pontiac Has New Forge Company.

For the purpose of taking over the forging department of the Flanders Mfg. Co., the Pontiac Drop Forge Co. has been formed in Pontiac, Mich., with a capitalization of $112,500. It will forge steels. The officers are M. Rothschild, Chicago, president; E. P. Waldron, vice-president; A. G. Griggs, secretary; D. C. McCord, treasurer and general manager. J. M. Grieve is production manager.

Bull Tractor Making Deliveries.

The Bull Tractor Co., Indianapolis, Ind., is now making shipments to dealers of the $335 plow tractor which it has been developing. The device uses only four gears, has a single front wheel which travels in a furrow, has two rear wheels, pulls two 14-inch plows and is said to have a hauling power equal to five or six horses.

Weed Tires of Frasse.

The Frasse Co., New York city, has been enjoined by the United States District Court from selling chain sections which could be made up to serve in the place of weed tire chains; this was held to be an infringement of the Parsons patent No. 723,299, owned by the Weed Chain Tire Grip Co.

Marvel Creditors Get Final Dividend.

The creditors of the Marvel Motor Co., which was petitioned into bankruptcy as long ago as 1907, have received their final dividend. Referee in bankruptcy Lee E. Joslyn has forwarded a payment of 5½ per cent. Previously a 3 per cent. dividend was given creditors. Before the company failed its liabilities totaled about $20,000, as against assets of $4,000.

Iceman Buys R. C. H. Buildings.

The power plant and certain other buildings of the old R. C. H. plant in Detroit have been purchased by the General Ice Delivery Co., of that city. The structures were sold with a plot of ground 200 x 400 feet.

Abbott Opens Detroit Branch.

The Abbott Motor Car Co., Detroit, Mich., has opened a new branch at 467 Woodward avenue. L. E. Wood, sales manager of the company, has charge of the branch, and O. A. Schreiber is assistant to Mr. Wood.

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In Salesroom and Garage

The Frank O. Renstrom Co. San Francisco, distributer of Regal cars, is enlarging its building to provide for a larger supply and accessory department, fronting on Van Ness avenue. A department will be maintained on the same thoroughfare for the sale of used cars, and the new car department will remain at Van Ness and Golden Gate avenues.

R. R. Nicholson has been admitted as a partner in the Auto Exchange Garage, Salem, Ore., by R. E. King and Hugh H. Hildebrand. Nicholson will take charge of the office end of the business. Arthur Foller, previously connected with the Howard Automobile Co., San Francisco, Cal., is another recently admitted partner.

H. L. Krieger and William E. Roby have taken over the Electric Service Garage at Meridian and Walnut streets, Indianapolis, Ind. G. T. Wellock, formerly with the Electric Storage Battery Co., Philadelphia, Pa., is connected with the new firm and will devote his entire time to battery troubles.

The recently incorporated Cadillac Automobile Painting & Trimming Co. is erecting a two-story plant, 90 x 120 feet, at Oakland avenue and East Grand boulevard, Detroit, Mich. In addition to painting and trimming motor cars the firm specializes in building bodies.

The W. E. Schaefer & Sons Co., Berlin, Wis., has moved into a new fireproof garage on Jackson street. The structure is 46 x 100 feet, two stories high and includes a repair-shop. The firm has the agency for the Cadillac, Buick, Mitchell, Chalmers and Metz.

To become the local distributer for the Oldsmobile in Sioux City, Ia., H. E. Shoeberg has disposed of his interest in the N. B. O'Connell Automobile Co., at that place, to N. B. O'Connell, who will continue to handle the Hupmobile.

The Auto Service Co. has taken over the Poyer Garage, Menominee, Wis. The retiring proprietors will devote their attention to the manufacture of the Poyer truck, and their successors will conduct a sales and garage business.

The Randall Auto Sales Corporation recently established an Auto Exchange at 118 West Wayne street, Fort Wayne, Ind. It is entirely separate from their regular business. The new structure is capable of housing 100 to 150 cars.

E. W. Brown and C. Rassmussen, Detroit, Mich., have organized the Safety Tire Co., with quarters at 953 Woodward avenue. Supplies and accessories will be handled, but tire repairing will be the feature of the business.

Fred S. Bell & Son have leased part of the Homier building, Mosinee, Wis., in which they will conduct a sales and garage business, carrying a full line of accessories. They have the local agency for the Saxon and Buick.

Archibald McDonald has awarded the contract for a garage to be erected on Ionia avenue, S. W., Grand Rapids, Mich. It will be a one-story structure with walls sufficiently strong to carry two additional stories.

R. G. Sloan, until recently connected with the Greensboro Motor Car Co., Greensboro, N. C., has disposed of his interest in that concern and formed the R. G. Sloan Motor Co. He will handle the Hupmobile.

The Dallas Body & Wheel Works Co., 23 Commerce street, Fort Worth, Tex., will erect a modern plant for the manufacture of motor car bodies, wheels, etc. A similar factory will be established in Dallas.

Vesperman Bros. are about to erect a modern fireproof garage, 40 x 60 feet, on Madison street, Damcaster, Wis. At present the firm represents only the Cartercar, but is negotiating for another line.

The Miami Motor Car Co.'s garage, Hamilton, O., has been taken over by Howard Sloneker and Adrian Wuille, formerly with the West Side Motor Co. They will continue to handle the Ford.

The Barneveld Auto Co. has been formed by Oliver Rongve and Spencer Harrie at Barneveld, Wis. They have the agency for Ford cars and will also operate a garage.

A 75-car garage is being erected at Commerce avenue and Island street, Grand Rapids, Mich., for S. S. Corl, of the Corl-Knott Co. The garage is 50 x 135 feet.

E. H. Rinehardt, until recently manager of several theaters in Menominee, Mich., has entered the trade as a dealer. He has the agency for the Buick.

Ground has been broken for a two-story brick garage, 40 x 70 feet, on Terrace street, Wilkes-Barre, Pa. Daniel F. Meehan will be the proprietor.

The Empire Automobile Co., Glens Falls, N. Y., has leased the garage at Hotel Champlain, Bluff Point. It will be managed by James McLaughlin.

Andrew Murphy & Son has embarked in the motor car business in Des Moines, Ia. The company has secured the agency for the Kelly and Stewart trucks.

To operate a modern garage and repair-shop, W. H. Wilbur & Son has purchased and remodeled a building at 314 Water street, Binghamton, N. Y.

J. R. Borthwick, formerly connected with the City Garage, Pittsfield, Mass., has opened a garage and repair-shop in that city at 159 Union street.

Ahwaga Garage is the style of a new garage and machine- and repair-shop just established in Owego, N. Y. H. J. Briggs is the proprietor.

W. G. Sanders & Son, 762 Woodward avenue, Detroit, has been made Michigan distributer for the Cricket Cyclecar Co. of that city.

A two-story modern garage, to cost $12,000, will be erected for A. W. Harroun, at 314 West 8th street, Mason City, Ia.

Carl and Leigh Hall, who operate the Hall Bros. Garage, Concord, N. H., have taken the agency for the Studebaker.

Donald MacVichie, Ludington, Mich., has opened salesrooms; he has the Oldsmobile agency for western Michigan.

A modern garage, to cost $8,000, will be erected for M. M. Cohn at 360 Douglas boulevard, Chicago, Ill.

In addition to its garage business, the Clinton Garage, New Haven, Conn., will establish a taxicab service.

W. C. Carlton and W. Schulz have opened a garage at 222 North Hunter street, Stockton, Cal.

Peter Holt is about to erect a garage and salesroom in Boscobel, Wis. He handles the Ford.

Couch Garage is the style of a new enterprise established by Ora E. Couch in Marion, Ind.

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The Week's Incorporations

Harvey, Ill.—International Cycle-Car & Accessories Co.; capital $5,000,000; to deal in cyclecars and accessories.

Waterloo, Ia.—Waterloo Overland Co.; capital $10,000; to deal in motor cars. Corporators—J. D. Hadley, John Hanson and others.

Birmingham, Ala.—Brownell Auto Co.; capital $10,000; to deal in motor cars. Corporators—E. W. Brownell, C. W. Richardson and Blaine Brownell.

St. Louis, Mo.—Laclede Automobile & Supply Co.; capital $50,000; to deal in motor cars and accessories. Corporators—C. S. Chickimer, L. F. Curtin and J. J. Miltenberger.

Cleveland, O.—Atlas Tire & Rubber Co.; capital $5,000; to deal in tires, etc. Corporators—J. M. Bernstein, E. E. Gross, N. J. Bekor, F. Allen and J. M. Ulmer.

Indianapolis, Ind.—General Machine Co.; capital $3,000; to manufacture motor car parts. Corporators—Harry F. Smenner, C. W. Shane and Dick M. Vesey.

Los Angeles, Cal.—Auto Enamo Finish Corporation; capital $10,000.

Portland, Me.—Three Field's Garage; capital $5,000; to manufacture motor cars and conduct a garage. Corporators—M. A. Thurston and others.

Moline, Ill.—Kellogg Turbine Muffler Co.; capital $15,000; to manufacture motor car and motorcycle parts and accessories. Corporators—Edwin N. Kellogg, Edwin N. Kellogg, Jr., and Elmer C. Brain.

Punxsutawney, Pa.—International Motor Co.; capital $15,000.

Cleveland, O.—Harris-Henderson Tire Co.; capital $5,000; to deal in motor cars and accessories. Corporators—J. A. Harris, F. A. Henderson, John C. Barkley, Raymond L. McVean and John P. Dempsey.

Minneapolis, Minn.—Regal Motor Car Co.; capital $25,000; to deal in motor cars. Corporators—R. C. Smith, A. P. Heaney, L. E. Smith and J. Costella.

Cleveland, O.—Trenton Motor Sales Co.; capital $5,000; to deal in motor cars. Corporators—W. K. Stanley, J. R. Jewett, P. C. Stoller, Samuel Horwitz and I. A. Skinner.

Detroit, Mich.—States Cycle Car Co.; capital $150,000; to manufacture cyclecars. Corporators—George W. Meredith, Samuel E. Jones and Victor W. Valade.

New York, N. Y.—Progress Auto Renting Co.; capital $1,000. Corporators—Morris Klein, 101 West 114th street; Samuel Klein, 55 West 116th street; Albert P. Blum, 1746 Bathgate avenue.

Philmont, N. Y.—High Rock Motor Co.; capital $5,000; to deal in motor cars. Corporators—Frank B. Harder, Philip M. Harder and Lewis F. Harder, all of Philmont.

Owego, N. Y.—B. Z. T. Co.; capital $25,000; to conduct a general motor car business. Corporators—Frank M. Baker, Fanny D. Baker and Crissy K. Bell, all of Owego.

Brooklyn, N. Y.—Bedford Taxi Cab Co.; capital $5,000; to operate taxicabs. Corporators—Isaac Cohen, 128 Humbolt street; Abraham Gurewits, 348 South 4th street; Benjamin H. Fraum, 806 Flushing avenue.

New York, N. Y.—Imperial Auto Touring & Taxicab Co.; capital $1,000. Corporators—Abraham S. Gussow, 621 East 3rd street; George C. Woolf, 5 Beekman street; Alexander Miller, 126 Fountain avenue.

Changes in Capitalization.

Reading, Pa.—Dile Motor Car Co., to $50,000.

Indianapolis, Ind.—Motor Car Mfg. Co., to $75,000.

Detroit, Mich.—Canfield Garage Co., from $5,000 to $12,000.

Recent Losses By Fire.

Salem, Mass.—R. H. Robson; garage destroyed. Loss not stated.

Dallas, Tex.—Galloway's Garage; garage and 20 cars destroyed. Loss, $50,000.

Coming Events

* Indicates sanction by A. A. A.

July 10, Rockdale, Tex.—Rockdale Automobile Club's track racemeet.

July 13-14, Seattle, Wash.—Track races under auspices of Seattle Speedway Association.

July 15, Detroit, Mich.—Distributers' Convention of the Briggs-Detroiter Co.

July 17-18, Seattle, Wash.—Seattle Motor Speedway's speedway races.

July 25, Portland, Wash.—Portland Automobile Club's track racemeet.

July 25-26, Belgium—Royal Automobile Club of Belgium's Belgian Grand Prize 2½- and 4-liter race.

July 30, Aug. 1-3, Galveston Beach, Tex.—Galveston Automobile Club's racemeet.

Aug. 2-9, Grenoble—Automobile Club of France's six-day motorcycle and cyclecar reliability contest in French Alps.

Aug. first fortnight, Auvergne, France—L'Auto's Coupe de L'Auto 2½-liter race.

Aug. 16, Le Mans, France—Automobile Club de la Sarthe's Coupe Internationale light car race, 1 liter, 400 maximum cylinder area and 350 to 500 kilos weight.

Aug. 17, Le Mans, France—Automobile Club de la Sarthe's Grand Prize de France for 4½-liter cars.

Aug. 21-22, Elgin, Ill.—Road races under the auspices of the Chicago Automobile Club.

August 23, Auvergne, France—Coupe de l'Auto Race.

August 27, Brooklands Track, England—Annual Automobile Race.

August, Russia—Road Race; Coupe de l'Empereur; 2,500 miles.

Aug. 28-29, Elgin, Ill.—Chicago Automobile Club's Elgin road races.

Sept. 2-7, Brescia, Italy—Automobile Club of Italy's 4½-liter Grand Prize.

Sept. 7, Providence, R. I.—Track racemeet under the auspices of F. E. Perkins.

September 7-14, Indianapolis, Ind.—Automobile Show, Indianapolis Automobile Trade Association.

September 9, Corona, Cal.—Road Race, Corona Auto Association.

Sept. 10-15, Berlin, Germany—German 4½-liter race.

Sept. 12, Hamline, Minn.—Minnesota State Agricultural Society's track racemeet.

Sept. 14, Milwaukee, Wis.—Track racemeet under the auspices of the State Board of Agriculture.

Sept. 18-19, Hutchinson, Kan.—Kansas City State Fair track racemeet.

September 26, Brooklands Track, England—Annual Automobile Race.

Sept. 26-Oct. 6, Berlin, Germany—Annual show.

October, Philadelphia, Pa.—E. V. A. A. Annual Convention.

Oct. 2-3, Oklahoma City, Okla.—Oklahoma City State Fair's track racemeet.

Oct. 2-3, Trenton, N. J.—Interstate Fair's track racemeet.

October 7-17, New York City—Electric Vehicle Show.

Oct. 9, Chicago, Ill.—Speedway races.

October 9-November 2—S. A. E. European Trip.

Oct. 16-26, Paris, France—Annual salon.

October 17-24, Pittsburgh, Pa.—Automobile Show, Auto Dealers Association, Inc.

October 18-31, Milwaukee, Wis.—Convention, Northwestern Road Congress Auditorium.

October 19, 20, 21, Philadelphia, Pa.—Electric Vehicle Association Convention.

October 19-26, Atlanta, Ga.—American Road Congress of the American Highway Association and the A. A. A.

Nov. —, El Paso, Tex.—Phoenix road races.

Nov. 8-11, Shreveport, La.—Track race-meet under the auspices of the Shreveport Automobile Club.

November 6-14, London, England—Olympia Show.

November 15, Paris, France—Kerosene motor competition.

March, 1915, Brussels, Belgium—National Union of Automobile Manufacturers.

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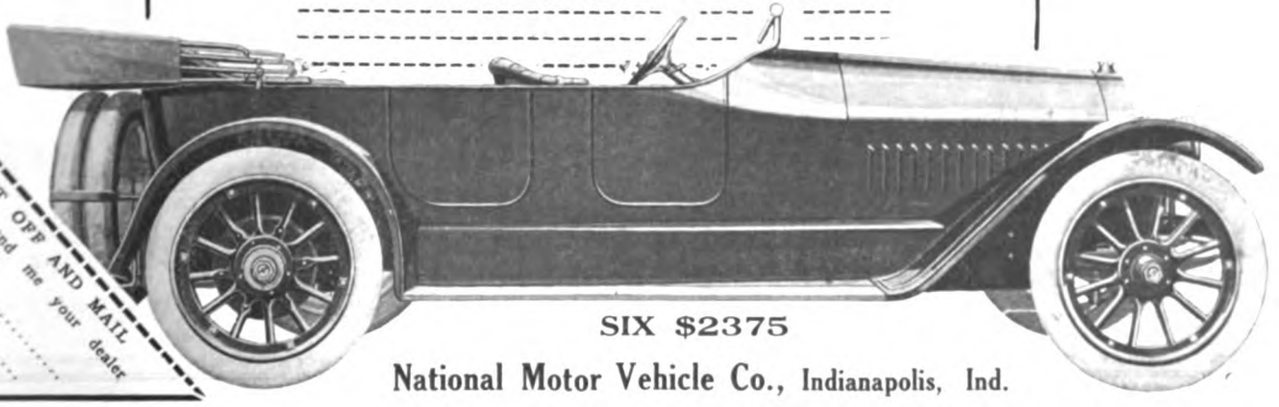
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DEALERS: The large addition to our factory has enabled us to greatly increase the production of Fisk Non-Skid Tires.

The demand for these tires has always exceeded the supply. We are now in a position, however, to begin to fill the orders that will come to every wide-awake dealer who handles the Fisk Line.

The Fisk Non-Skid is a trade stimulus.

The Fisk Rubber Co.

Factory and Home Office Chicopee Falls, Mass.

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Write Dept. 23 for our Dealer Proposition



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Time to Re-tire?
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The LBA Battery Never Copies



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THE PROCESSION BY A LARGE MARGIN

Its outside appearance has been closely copied by other makers, but the inside, the part that counts, has never been duplicated.

To offset the LBA reputation for great superiority,

Some Claim Greater Capacity
Some Claim Lower Price
Some Claim Heavier Construction
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they all use as a basis for comparison the old reliable LBA, which maintains, as it always has, a symmetrical, well-balanced compromise between weight, capacity and price.

Over 300,000 LBA Storage Batteries have been put into service during the year ending July 1st by 141 makers of gasoline cars. (See our published index of manufacturers who use LBA exclusively.)

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MAXWELL MOTOR SALES CORPORATION

AUTOMOBILES

WOODWARD AND WARREN AVENUES

EXECUTIVE AND SALES OFFICE

DETROIT, MICH

Cable Address "MAXCO"
WESTERN UNION LIEBERS AND A.B.C. 5TH EDITION CODES.

June
26th
1914.

THE NEW 1915 MAXWELL "25."

EXTREMELY IMPORTANT TO DEALERS IN AUTOMOBILES.

Between July 15th and August 1st we shall announce,- place upon display and exhibit our new 1915 Maxwell "25," to retail at $750.

We shall begin the distribution throughout the country of this new 1915 "25" model by August 1st.

We confidently expect to be able to build 60,000 of these new 1915 "25" models retailing at $750. within one year.

We shall do all that human endeavor and our immense factory facilities can do to build at least 60,000.

I confidently predict that this new Maxwell "25" retailing at $750. will be the greatest sensation that the automobile world has ever known.

I base this prediction upon the car from the ground up - its chassis; its motor; the lines and size of its body; and the unexpected extra and additional features which will be placed upon this car.

Walter E. Flanders.

President,

Maxwell Motor Co., Inc.

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Prest-O-Lite

The Sure Cure for Lighting Troubles

"Don't lose any more time or money on this electric system—

The easiest and best way to save yourself further bother and expense—The only way to get satisfactory and dependable light—

Get Prest-O-Lite"

That's what the wise repair man says and—

Every Night Proves It!

Thousands of motorists who have tried out electricity for lighting and are tired of paying for constant repairs and replacements are having these systems torn out of their cars and going back to Prest-O-Lite.

Eliminate the useless complication and troubles of electricity—cut down weight—increase power. For the cost of one repair bill or a battery renewal, you can make the change from electricity to the safe, satisfactory, saving service of Prest-O-Lite

No matter what self-starter is on your car, be sure your lights are gas lights. Reliable light is just as essential as fuel.

Convenience

The Prest-O-Liter or any other good automatic gas lighter, offers you every "push-the-button" convenience for lighting, dimming or extinguishing your gas lights. The automatic reducing valve prevents the flame from exceeding the proper height.

Use the Coupon

Get the real facts about satisfactory light today Wake up to the new meaning of gas lighting with every comfort, convenience and economy. Your address brings it.

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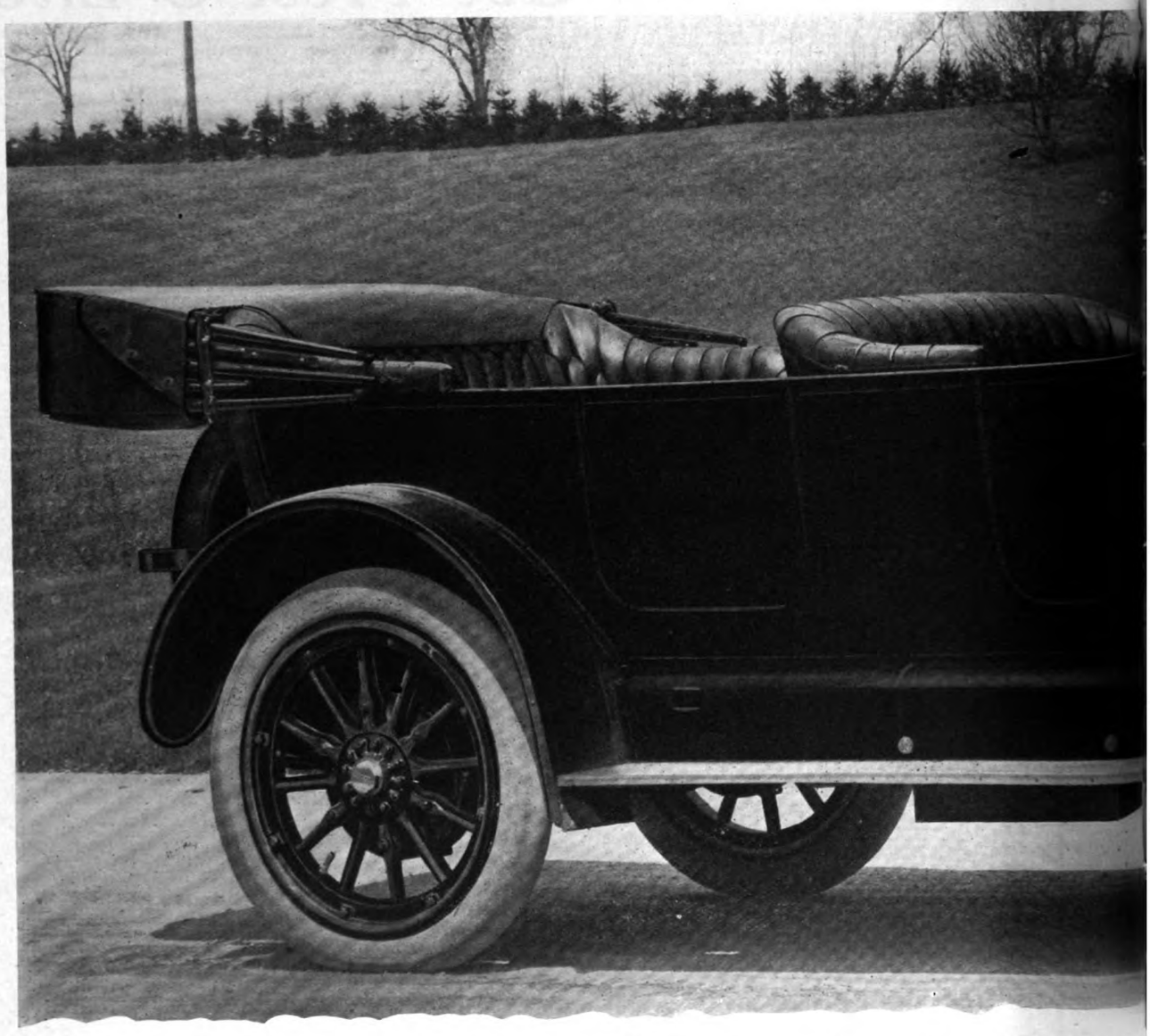
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1915 A New Series

Mr. Dealer:

Have you ever seen a better looking car? NO! IT'S A REAL 1915 MODEL and it lists at $400 less than its predecessor. AND the same quality of specifications remain (and there are no better in any car irrespective of price).

Here is the great big buy of the season. THINK IT OVER. Then act! Attractive appear-



Premier Motor Manufacturing

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=A New Price

$2385

ance and price; sturdy construction and UP-TO-THE-MINUTE design and equipment, backed by PREMIER reputation and prestige, insures the sales advantage—the edge—to do the big early 1915 business with this Premier 6-49.

Let us hear from you or call and see this car and the factory that builds it.

Prompt Deliveries—Immediate Profits



Company, Indianapolis

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Mosler Vesuvius Plugs



Have no equals for speed and power.

Made to fit any engine, any thread.

Stone Insulation is practically unbreakable.

Unique method of assembly renders Vesuvius Plugs absolutely gas tight and insures perfect adjustment of sparking points.

A.R.MOSLER & Co
NEW YORK N.Y.

199-R

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POWERFUL INDESTRUCTIBLE AND SURE

Powerful because of faultless design.

Indestructible because of the finest materials.

Sure because of methods and workmanship employed in manufacture.

EXCLUSIVE FEATURE

Note ears on collar.

The only plug that has means for assembly without rotating the insulator.

Washer and ears take up all friction of the nut and give the direct straight pressure which makes the plug absolutely gas tight.



Collar takes up friction of nut.

Collar cannot turn when nut is tightened because ears on collar fit into slots in shell.

0631

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Written for Men Who DO BIG THINGS

Let us get your mind concentrated on this thought.

The automobile that is going to live will be the automobile that leads—

The big, broad-gauged American who is a leader in his own business always looks for leadership in other lines and accords it profound recognition when he finds it.

This principle is worth noting, because it has a direct and powerful application to the automobile we are building.

The leaders in finance, in sports, in art, in industrial activities, in commerce and finance, are well known to all of us.

Their leadership is an established fact and is based on extraordinary accomplishment.

When we of the automobile business look about us for real leadership we find that a small group dominates. One part of the group dominates by quantity. The other dominates by quality.

The Moline-Knight 4-cylinder automobile is in the quality dominating group. In one particular—it leads the others.

The particular position that the Moline-Knight has won is due to a demonstration of power, service and strength that has never been equalled in automobile history.

Every well posted automobile engineer knows what the Moline-Knight has done. It is important that men who sell cars and men who drive them shall also know it—because in the new era that is dawning in the automobile business, MEN WHO DO BIG THINGS will not be satisfied to own or drive just ordinary cars. And the big men who ***sell cars*** will also recognize leadership, because they will not be satisfied to successfully merchandise just ordinary cars.

The Moline-Knight is an extraordinary automobile.

Moline Automobile Company, East Moline, Illinois

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The Story of a Car That Stood Up

When this corporation accepted the Knight-principle for the Moline car, we were satisfied that it represented the greatest mechanical advance that had been made in motor building of the internal combustion type.

Remember, we were engine builders long before automobiles were thought of.

We wanted a demonstration of the efficiency of the combination, The Knight principle and Moline engineering.

Arrangements were made with the mechanical research division of The Automobile Club of America for the most thorough and carefully measured test of an automobile engine that had ever been made by an absolutely non-partisan group of qualified engineers.

Result: To quote from the report of the testing committee, "Moline-Knight Motor ran without any stop whatever for three hundred and thirty-seven hours with wide open throttle and set spark, at an average speed of 1117 revolutions per minute, with an average brake horsepower of 38.3, ending up with 53 horsepower at 1682 revolutions a minute."

The equivalent of two weeks' continuous operation and measured by the mileage produced 14,700 miles at 45 miles per hour.

When this test was ended, the Moline-Knight automobile had established, without question or doubt, its position of leadership of American made automobiles.

We believe we have reason, and good reason, for the particular attention of the motorist and the dealer, who wants the prestige that comes from owning or selling a car of unique and established character. We will not particularize here on details and refinement of finish and construction. We will say, and prove, that every part of the car is as sound and as beautiful, and as replete with character as the great engine which made it famous.

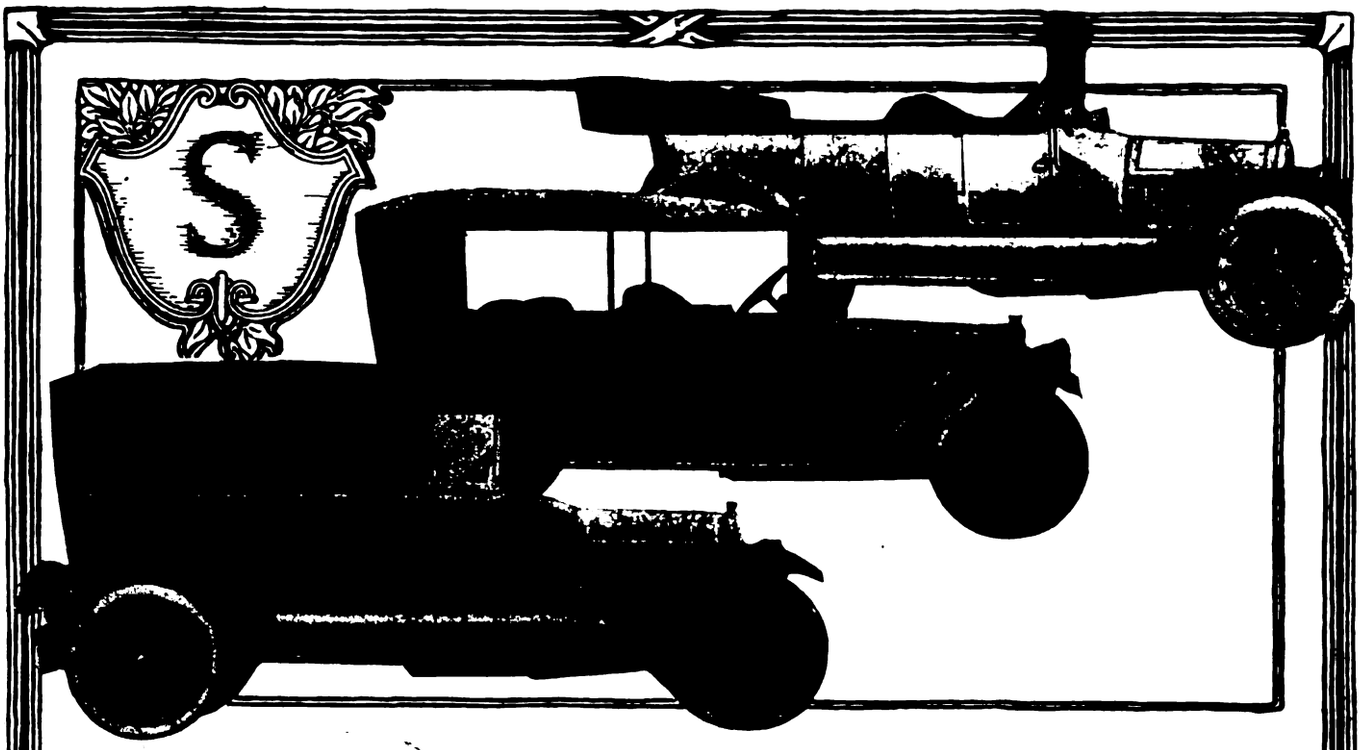
The Moline-Knight has extraordinary attractions for the man who wants a different and better automobile.

There is a limited product. Four to five cars a day, are as many as we can build—OUR WAY.

Our way is the careful, scientific way, with every step in design, construction and manufacture watched by experts. Men who put their hearts in their work, and who are proud of their product. We want the dealers who have customers for this kind of a car to write to us. We want the men who will buy this kind of a car to ask for further information.

Moline Automobile Company, East Moline, Illinois

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SPRINGFIELD
Convertible Bodies

are the logical solution of the problem confronting 99% of your customers—how to have a car which can be used in all kinds of weather.

Not over one per cent of the motorists can afford both an open and a closed car. Therefore, it would be good judgment on your part to order one of your chassis equipped with a Springfield Convertible Body to show and demonstrate to 99% of your customers—good judgment because:

1st. It meets the requirements of the greatest number.

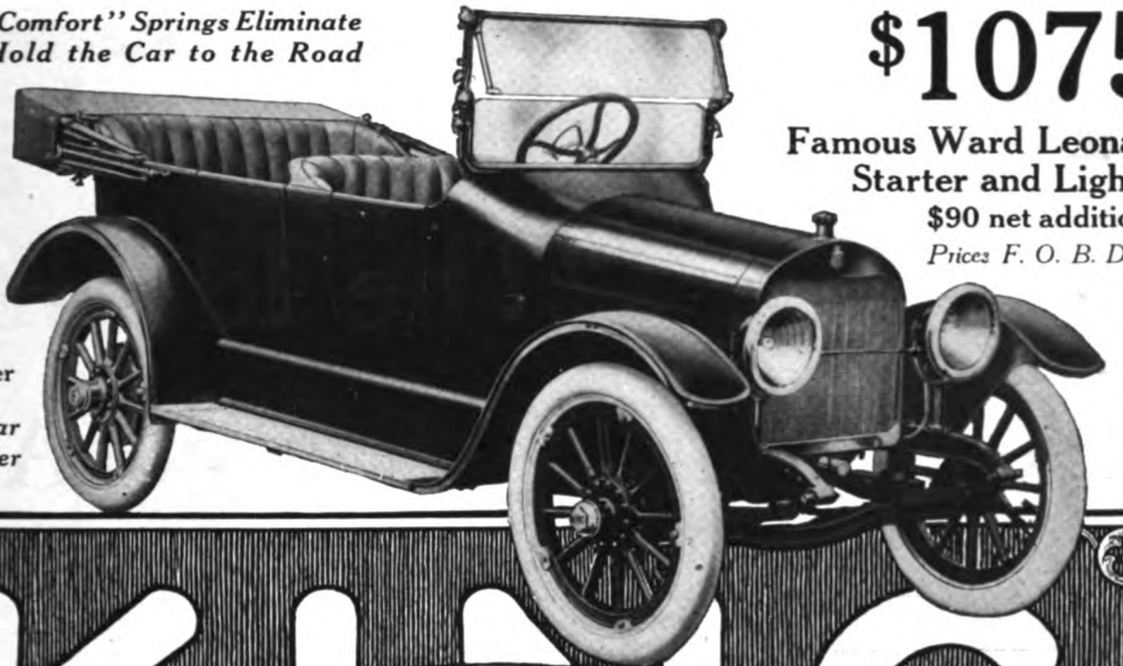
2nd. There is an added profit for you on each sale.

Particulars on Request

Springfield Metal Body Company
Springfield, Mass.

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Cantilever "Comfort" Springs Eliminate Jolts and Hold the Car to the Road



$1075

Famous Ward Leonard Starter and Lighter
$90 net additional
Prices F. O. B. Detroit

30-35 Horsepower

Touring Car and Roadster

KING

ANNOUNCEMENT OF MODEL C

THE CAR OF NO REGRETS

Pure European stream line body.
Flush "U" doors. No moldings.
Concealed hinges and latch handles.
Full floating rear axle.
Combination head lamps.
Instrument board.
Special crown fenders.
Gasoline tank in cowl.
Hyatt roller bearings.
Honeycomb radiator.
113" wheel base.
Center control.

New price, new body, new chassis refinements, but retaining all the sturdiness, reliability, and special mechanical features that made the 1914 model a success the world over.

The KING chassis has always been built to give many years of faithful, economical service. Now it comes with a body of a type pronounced by the majority of engineers to be the *ultimate* motor car design. In Model C you will be buying for a decade.

All stock of the KING MOTOR CAR COMPANY is owned by the active executives of the Company. These stockholders prefer solid, successful growth rather than large, immediate profits. To this end they insure careful, high grade manufacturing by including every employee in an annual distribution of profits. The KING was first to do this. With this painstaking and responsible manufacture, go materials of such high quality that only by cash buying and modest profits can such a price as $1075 be made possible

Dealers Should Not Delay

in arranging for territory yet unallotted. The KING'S 1914 success is about to be repeated manifold. A handsome, dependable, economical car of popular name and price, produced by a financially solid factory, and generously advertised, is a combination that will mean big 1915 profits.

King Motor Car Company

1300-1324 Jefferson Avenue, Detroit, Michigan
New York Agency and Showroom, Broadway at 52nd St.
New York Service Department, 244-252 West 54th St.

Multiple disc cork insert clutch.
True ventilating, rain-vision wind-shield.
Extra deep tilted cushions.
Silk mohair one-man top.
Option on two gearings.
Flush-top upholstery.
Gemmer steering gear.
Stromberg carburetor.
$3^{15}/_{16}$" x 5" motor.
Extra heavy frame.
18" steering wheel.
Full equipment.





KING MOTOR CARS are operating efficiently and economically in England, Germany, Australia, India, Switzerland, Guatemala, Philippine Islands, New Zealand, Chile, South Africa, Uruguay, Java, Martinique, Colombia, Sweden, Brazil, Ceylon and Denmark

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Have You Read The "The Ideal Car"

Last week the Society of Automobile Engineers met at Cape May.

The principal topic of discussion was the ideal car.

The most brilliant engineering minds of America were concentrated in the formulation of a set of specifications, which, all taken together, would constitute the ideal car for you.



Note the principal ones on the opposite page and then watch out for the announcement of this Company in the July 25th issue of The Saturday Evening Post and in the columns of the motor journals.

Digitized by Google

Suggested Specifications of the S. A. E.?

Specifications as commonly advanced by engineers

Full French Stream-line Body	High-Speed, High-Efficiency 6-Cylinder Motor
Worm Drive	Size of Motor about 3 x 5
4-Speed Transmission	High Tension Ignition
Cantilever Springs	Left Side Drive, Center Control
2-unit, 6-volt Electric Starter	Two Brakes: Internal Expanding
Three-plate Dry Disc Clutch	Rear Axle Full Floating
One-Man Top	Weight about 2750
Daimler Leather Couplings	
Pump Water Cooling System	

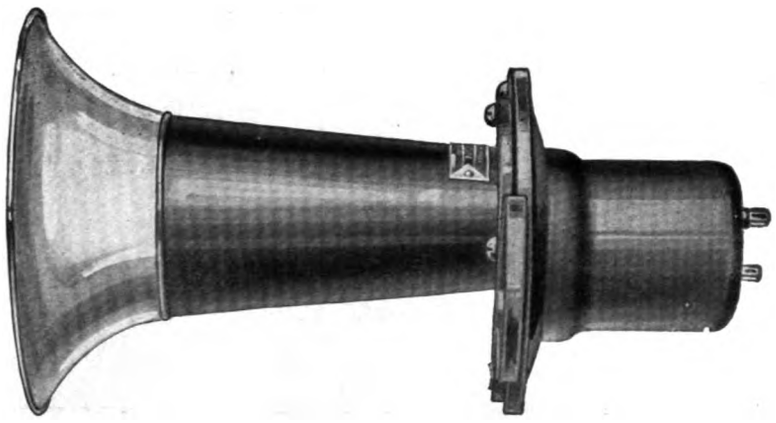
The Thomas B. Jeffery Company is fast being recognized as the pace-maker in American motor car engineering practice. The now famous Jeffery Four exemplified this.

This last recognition of the Jeffery leadership by America's supreme court of engineering is a fitting triumph.

The Thomas B. Jeffery Company
Main Office and Works, Kenosha, Wisconsin



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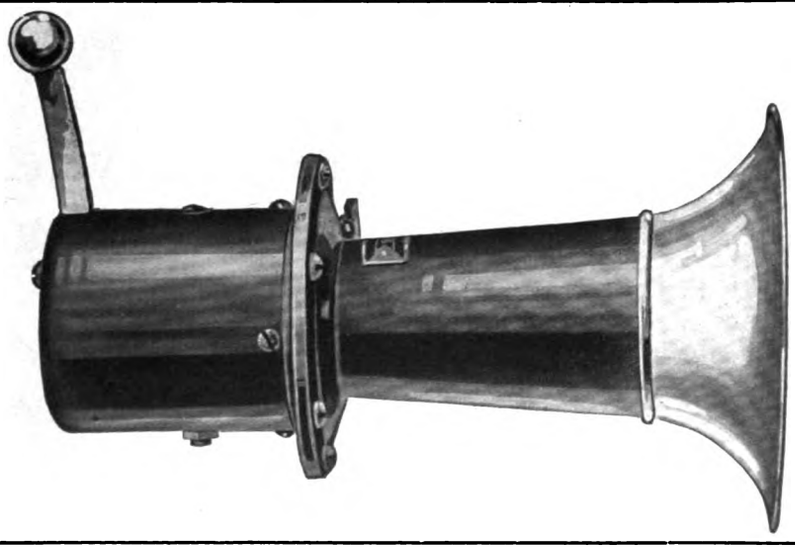
$9.50 to $15.00

SPARTON

Electric Motor Driven and Hand Operated Signal

The motorist cannot afford to depend on a good enough warning signal. When the time comes for action, he must have a horn that will compel quick, unthinking, instantaneous jumping—such is the discordant, action-compelling growl of the SPARTON when the button is pushed home. On country stretches a good pressure on the button produces a warning clarion that can be heard a mile down the road, giving everyone time to get out of the way. On city streets a light touch produces an inoffensive, but authoritative command, warning people at close range.

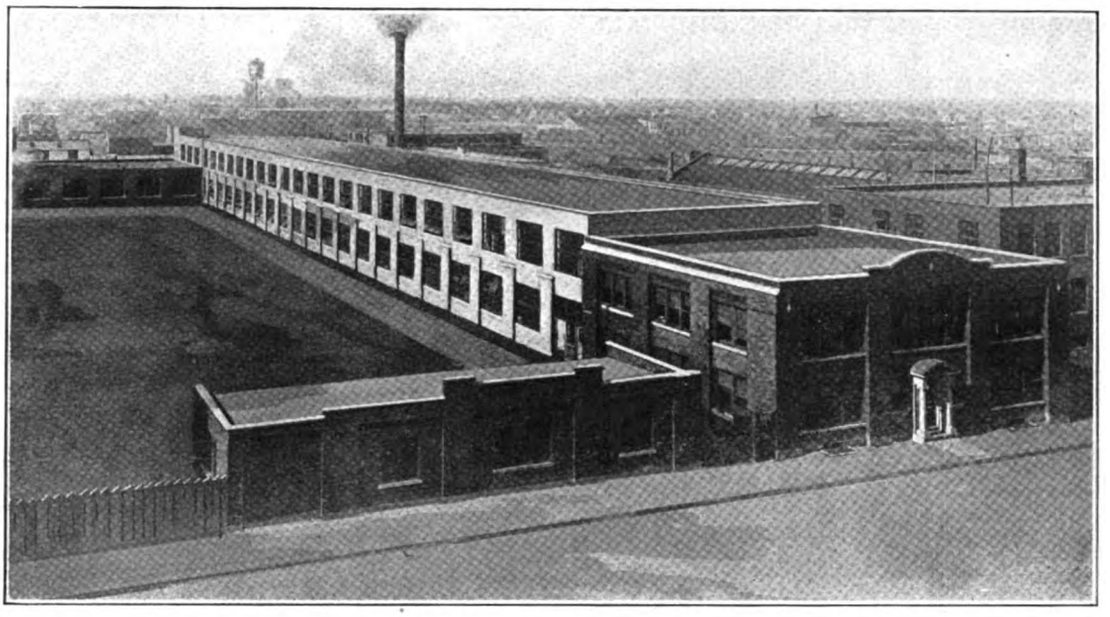
Hand Operated $7.00 and $8.00



Hand Operated $7.00 and $8.00

The Sparks-Withington Co., Jackson, Mich.

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Houk Manufacturing Company's Plant—Buffalo, N. Y.

World's Largest Wire Wheel Factory

The demand for wire wheels in this country has increased so rapidly that the plant of the Houk Mfg. Co., at Buffalo, N. Y. is now the largest of its kind in the world—surpassing in size even the greatest of the European factories.

The popularity of wire wheels is steadily increasing. A year or two from now a car without wire wheels will be as antiquated as a car without a self starter.

Specify the leaders:

HOUK
Detachable
Wire Wheels

Made in Sizes to Fit all Cars

Manufactured by the Houk Mfg. Company, for the Geo. W. Houk Co., 1703 Elmwood Ave., Buffalo, N. Y.

USE THIS COUPON

Geo. W. Houk Co.
1703 Elmwood Ave.
Buffalo, N. Y.:—

Without obligation on my part send me catalogue and prices on Houk Wire Wheels for a

.....car.

Model.....Rim size.....

Name .....

Address .....

.....

Digitized by Google



Gilmer Rebound Straps Set of 4 for Ford Cars, $4.00

COMMON SENSE

Turn Over Merchandise Quickly

Or

Don't Stock It

Business is Business and you are in it for the money there is in it. There is less of a gamble in handling a lot of little goods than a few big pieces.

There is no gamble at all in stocking

Gilmer Products

Gilmer Rebound Straps

The Gilmer Rebound Strap when applied to a Ford makes it ride even regardless of the road or the load arrangement. They do away with all side sway.

Gilmer Rebound Straps are standard equipment on such cars as Cadillacs, Hupmobiles, Packards, Chalmers, Marmons, Premiers and others. This fact in itself should convince you as to the quality of service to be expected from Gilmer Rebound Straps.

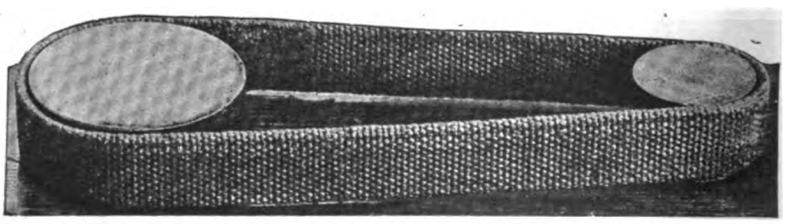
The retail price of Gilmer Rebound Straps for Ford cars is $2.00 per pair or $4.00 per set.

Gilmer Ford Fan Belts

are many times as efficient as the standard leather belt because of their adaptability to the short-center pulleys of Ford cars. They are weatherproof and heatproof—dust and oil do not affect them.

The price of Gilmer Ford Fan Belts is now 30 cents each. Do not miss any of this easy business but send your order for a few today. There isn't a Ford owner in your territory who will turn you down if you put such a practical proposition as this up to him.

There is a big demand for both these articles. Their prices are within reason and reach of all. Our discounts to dealers are long. Write for particulars.



Gilmer Ford Fan Belt. Price, each 30c.

L. H. GILMER COMPANY

52 North 7th Street **Philadelphia, Pa.**

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Studebaker

"SIX" $1575

THERE is no other motor car organization in the world that is so wonderfully efficient a unit as the Studebaker organization.

A corps of experienced engineers are in charge both of design and of production.

These men know how a car should be designed and how it should be built, for they are practical manufacturers as well as expert designers.

As a result both the Studebaker FOUR and the Studebaker SIX are not only beautiful in design, but they are practical in every detail—and they are as staunch and strong as the best steels, scientifically heat-treated, can make them.

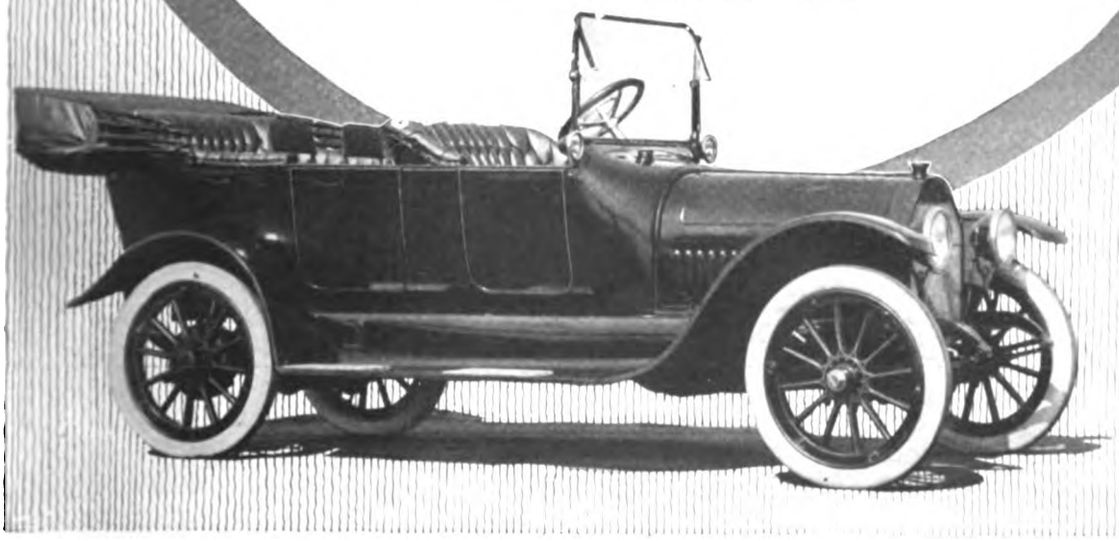
Because Studebaker cars are made in their entirety by Studebaker; because they are made in huge quantities, and efficiently; they are made economically—which permits Studebaker to market them at prices far below what any other maker would have to get for equal quality.

That is why the Studebaker dealer has no real competition.

Studebaker
Detroit

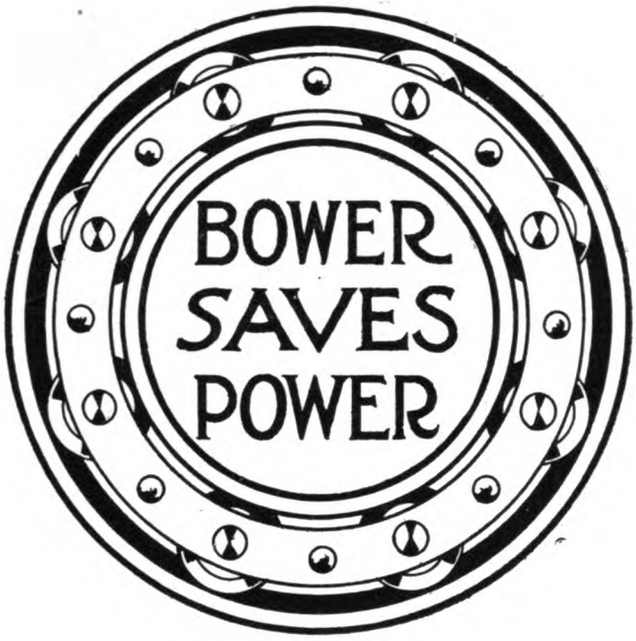
F. O. B. Detroit

FOUR Touring Car	$1050	*SIX Touring Car*	$1575
FOUR Delivery Car	1150	*SIX Landau Roadster* . . .	1800
SIX Sedan	$2250		



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"BOWER SAVES POWER"



Why Bower Saves Power

In cars equipped with Bower Roller Bearings the toll exacted by friction is reduced to the minimum. Bower Bearings are scientifically designed to reduce friction, avoid wear, and obviate the need of adjustment.

They fulfill these three functions because of their construction. They consist of a cylindrical roller with a flanged head at one end. The flange takes care of end thrust. The constant radial load is supported along the whole length of the cylindrical load. Bower rollers and race-ways are always parallel. Therefore, in the first place, a maximum diameter of roller can be used. In the second place, the bearing is self-aligning. In the third place, the bearing needs absolutely no adjustment.

No other bearings combine these advantages of Bower Roller Bearings.

BOWER ROLLER BEARING COMPANY
Detroit, Michigan

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FEDDERS RADIATORS

"Quality First!"

Quality is the mark which all radiator makers claim—which most radiator makers aim at and which Fedders employees attain.

Fedders employees are given a design which has been perfected in over sixteen years of radiator making experience. Next they are given the highest grade of materials adapted for the particular purpose they serve.



STUTZ

In front of each employee in the Fedders shops a warning sign is posted—"QUALITY FIRST!" so as to keep Fedders policy fresh in the minds of Fedders employees every minute of the day and every day of the year. The result of quality in every phase of radiator building has resulted in a quality product, and because Fedders Radiators are quality products, there are on the books of the Fedders Manufacturing Company many accounts both for pleasure cars and trucks which have been there consistently for years.

If quality as a watchword has been instrumental in helping us to build a successful radiator business, will not Fedders quality Radiators be instrumental in helping you build a successful car?

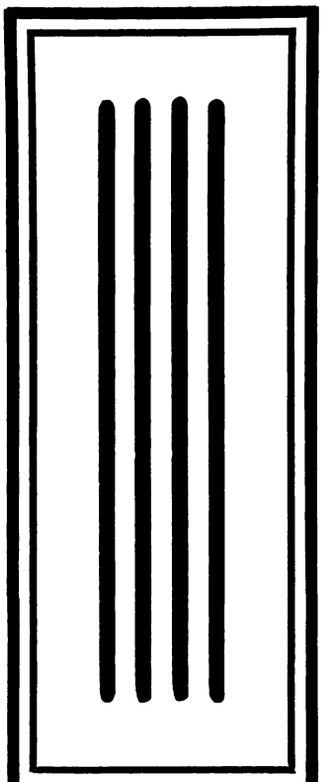
FEDDERS MFG. CO., Inc.

Buffalo, N. Y.

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MOTOR WORLD

The Dealer's Paper



The Publication Serves the Manufacturer Best Which Helps the Dealer Most.

ALL advertising is an effect—an influence. In the automobile business, any advertising campaign that is not designed to have a strong dealer effect and a strong influence upon the trade is poorly, even thoughtlessly planned and will fall far short of what it might have accomplished. This is so because advertising effort must go before and parallel to selling effort, and trade advertising should be your intimate personal connection with your actual or potential selling force.

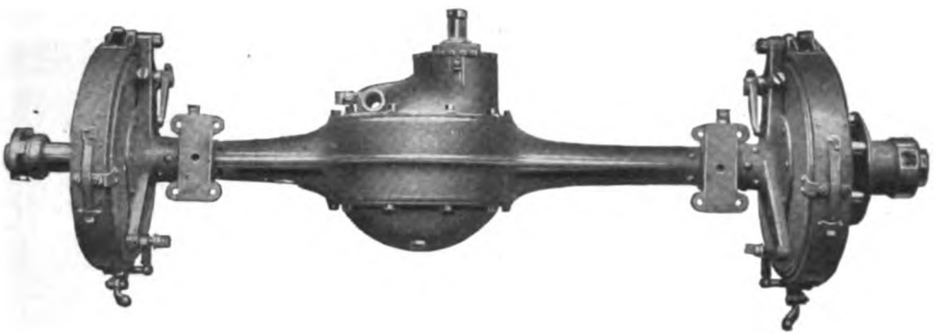
Motor World is the Dealers' Favorite Trade Paper

because it helps them, and by so doing gives double the influence to its advertising, logically.

Advertising is done for effect. Dealer effect advertising should be done in the dealers' paper.

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American Axles



Distinguish The Cars That Carry Them

Admittedly the finest and best, they are naturally to be found only on gasoline and electric pleasure cars of the highest grade.

The use of *American* Axles is a recognition of the fact that the efficiency of the axle establishes, in a very large degree, the quality of the car.

Highest axle efficiency means extreme economy of operation, maximum power and the limit of durability.

These characteristics reach their uttermost development in *American* Axles, because of their superiority in design and the quality of all materials used.

Licensed Under the Kardo Company Patents



THE AMERICAN BALL-BEARING CO., Cleveland, Ohio

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Announcement of Importance to the Trade

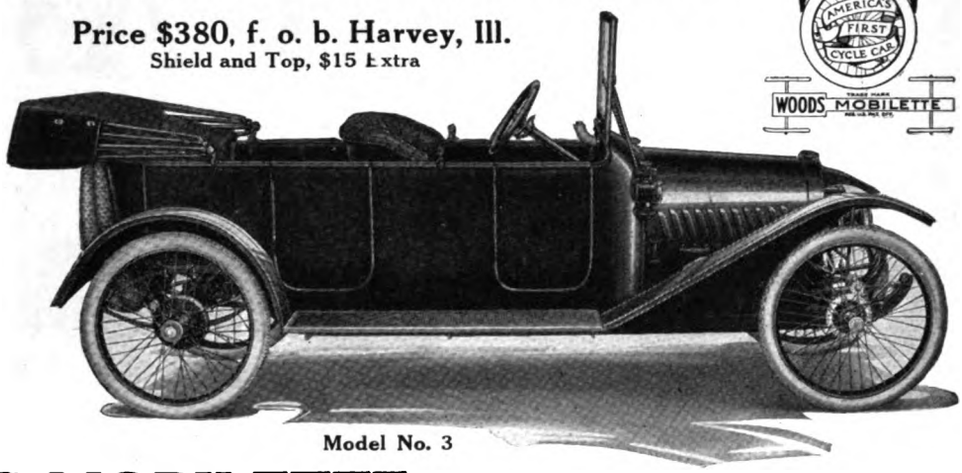
International Cycle-Car and Accessories Company announces its organization as general distributors of cycle-cars, cycle-car parts, assemblies and accessories.

It announces the entering into an arrangement with **Woods Mobilette Company** for the general distribution of **Woods Mobilettes**—America's First Cycle-Car—and for the general distribution of such other cycle-car parts as **Woods Mobilette Company** will manufacture for the trade.

It will also handle cycle-car accessories, and correspondence from manufacturers of same, is invited.

The policy of **International Cycle Car and Accessories Company** will be strictly one of dependable service. It will deal direct with each dealer, thus insuring to the manufacturers represented on the one hand and to the dealer and consumer on the other, a service that is at once economic, speedy, effective, direct, efficient and satisfactory.

Price $380, f. o. b. Harvey, Ill.
Shield and Top, $15 Extra



Model No. 3

WOODS MOBILETTE *"America's First Cycle-Car"*

Wheel Base, 102 in. Tread, 36 in. Motor: 4 cylinder—12 h. p., water cooled. Transmission: Sliding gear type; 2 speeds forward and 1 reverse. Axles: Drop forged—1850 lbs. capacity; rear axle full floating type. Every mechanical detail is of superior and proven worth.

THIS CAR IS AN AUTOMATIC SELLER. The guarantee of integrity is valid **Dealer's Applications Being Acted Upon in the Order Received**

INTERNATIONAL CYCLE-CAR and ACCESSORIES CO.

General Distributors

SALESROOMS: 1509 Michigan Blvd. **Executive Offices, H-1109 Security Bldg., Chicago, Ill., U. S. A.**

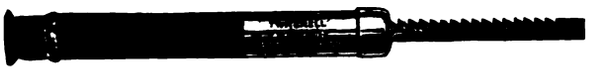
Look to your Tires

YOU can take a *thousand miles of service* out of a set of tires by driving them insufficiently inflated over *ten miles of road.*

The New Positive Lock Stop Twitchell Air Gauge

Insures you against premature wearing out of tires.

It is TIRE INSURANCE FOR ONE DOLLAR



For Sale by Jobbers, Dealers, Garages or

The Twitchell Gauge Company
1202 Michigan Avenue **CHICAGO**

Ford
THE UNIVERSAL CAR

Model T Runabout - - $500
Model T Touring Car - 550
Model T Town Car - - 750

With Full Equipment f. o. b. Detroit

Ford Motor Company
Detroit, Michigan

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BOSCH



What Every Motorist Should Know

If you are interested, really interested in securing the best possible spark plug—the plug that meets your requirements absolutely—that gives maximum power to your motor—just write for the booklet—

"Locating The Spark Plug"

It discusses freely all types of plugs—their weakness—their strength.

After reading it you will know if your spark plugs have been to blame for poor motor performances, you will buy with a thorough knowledge of what you require—then you will get your money's worth.

A post card will bring it—say: "Send me the free booklet: 'Locating the Spark Plug.' I drive a_____."

BOSCH MAGNETO COMPANY, 224 West 46th St., New York

199 Service Stations to Serve Bosch Users

New Departure Ball Bearings



A Fair Question Deserves a Fair Reply

In designing your next car, the question of bearing equipment will, of course, receive the serious consideration so important a question deserves.

In all fairness, New Departure ball bearings more than answer that question.

It is a bearing of guaranteed quality including high grade materials, accuracy of finish, and uniformity of dimension. It is the product of an American factory with ample capacity for prompt and complete deliveries without liability of troublesome delays such as are sometimes experienced by manufacturers who buy their bearings abroad.

Why not give New Departures a thorough tryout?

A line from you will bring our literature and representative. May we send either or both and inform you fully of our proposition?

The New Departure Manufacturing Co., Bristol, Conn.

Western Branch, 1016-17 Ford Building, Detroit, Mich.

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SPLITDORF MAGNETOS—low and high tension—are made in a wide range of models for all manner of work and they'll give your motor more power—make your motor run smoother and quieter than will any other make, and, equipped with one, you can always start your engine on a quarter turn.

We'll exchange your present magneto of any make on a liberal allowance basis for an up-to-the-minute SPLITDORF low or high tension.

SPLITDORF PLUGS are not experimental—they are standard. Known since their first appearance as the "common sense plug" they are exactly that—no more and no less. SPLITDORF PLUGS will outlast your motor—thousands are rarely removed from a cylinder head. There is nothing fanciful about them—they are made to endure any and every strain of ignition put upon them.

SPLITDORF ELECTRICAL COMPANY
98 Warren Street NEWARK, N. J.



Commercial Cars for All Uses

Let us show you how the sturdily built KisselKar Trucks will reduce your haulage costs. All type bodies—special bodies designed. 1500 lb., 1, 1½, 2½, 3½ and 6 ton sizes. Great reserve power, low fuel cost—wonderful service on all roads and loads.

Write for big portfolio showing over 300 trucks in actual use.

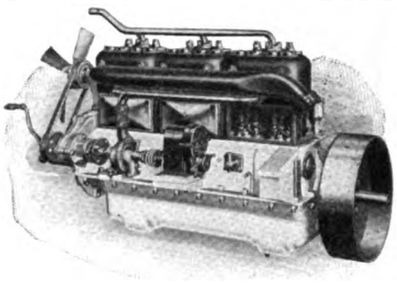
KISSEL MOTOR CAR CO., 159 Kissel Ave., Hartford, Wisconsin

KISSELKAR TRUCKS

THE RUTENBER MOTOR

Manufactured since 1901 for high grade
AUTOMOBILES and TRUCKS

3¾ x 5¼ four and six cylinder, 4¼ x 5¼ four cylinder, Standard or Unit, and 4 x 4 and 4½ x 5½ Standard types, all L head—4 cycle.



Manufacturers are invited to investigate our service and our facilities. Literature on request.

The Rutenber Motor Co.
MARION, INDIANA

DEALERS who are looking for a real opportunity to build a substantial, permanent business will find the 4-page advertisement of Century Electric Car Co. which appeared in Motor World, June 24, full of practical suggestiveness.

We have an *unusual* electric—and yet there is nothing freakish or radical—and, now is the time to write.

CENTURY ELECTRIC CAR CO., Detroit, Mich.

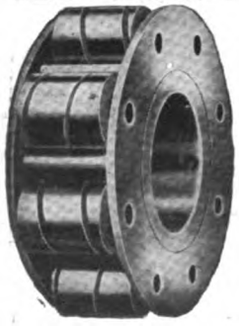
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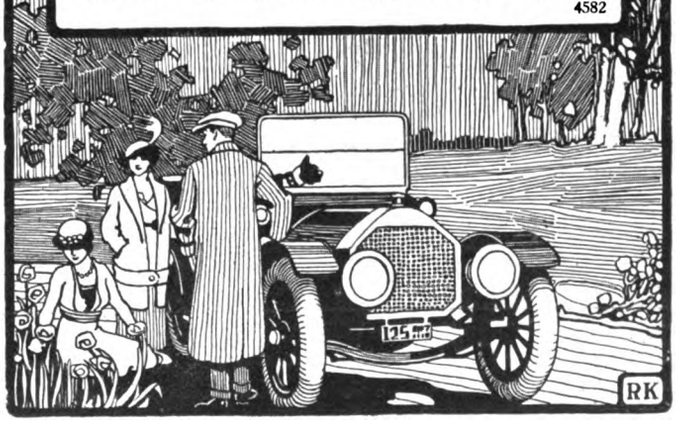
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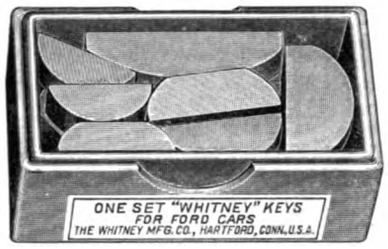
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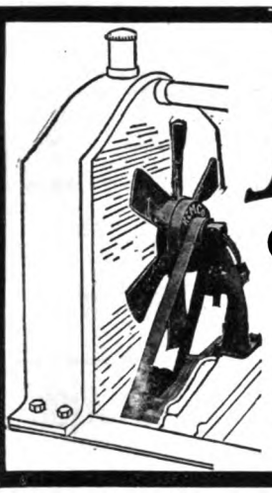
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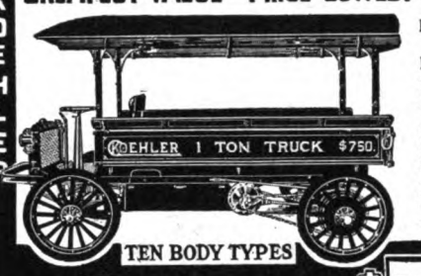
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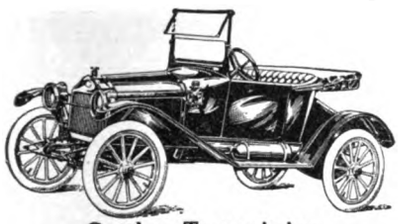
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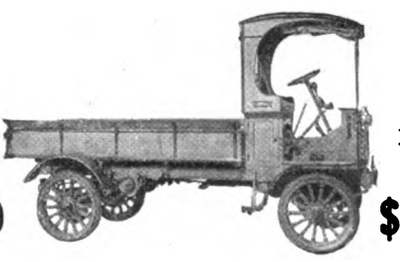
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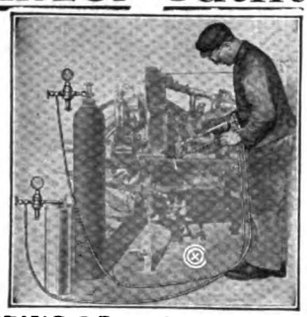
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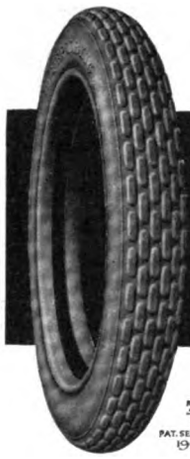
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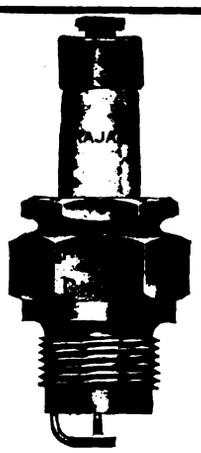
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Made with oil to keep soft all leather, rubber and pantasote tops. Dries out of dust in three hours. Leaves a nice gloss finish like a new top. Buy it from your Garage-Dealer-Jobber. One quart for an ordinary five passenger car.

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The Best in Automobile Fabric Development

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Laidlaw BURBANK MOTOR CLOTH

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The ideal automobile top fabric must not only be waterproof when new but must remain waterproof, hold its color and shape, and not stretch or shrink. It must fold easily and compactly at the same time not break or crack the cloth or any part of it. It must be just as serviceable in the winter blasts of Minnesota as in the summer heat of Florida because it is a practical impossibility for the American automobile manufacturer to vary the equipment of his cars in accordance with the part of the country to which they may be shipped.

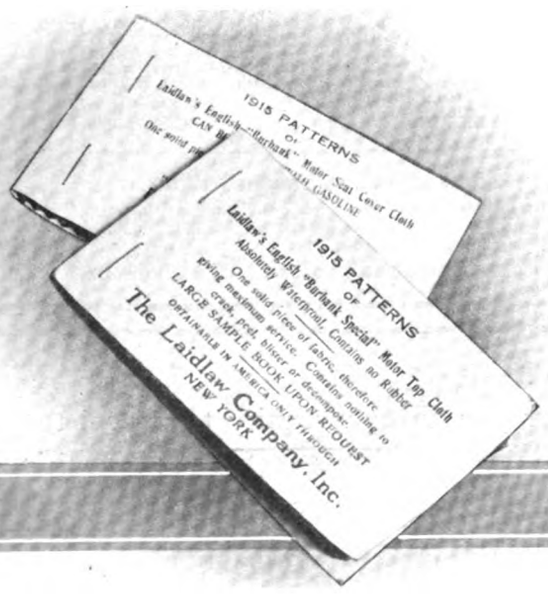
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Be guided by the experience of Laidlaw-Burbank users. We will be glad to tell you who they are.



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350,000

Motorists use the Klaxon



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1608

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3. Single piece, Jointless Separator, permitting the maximum number of the maximum size of balls.
4. Raceways ground to the contour proved and admitted to be the most efficient, and always so ground.
5. Rings ground to a degree of concentricity unapproached by any other make.
6. Made to a degree of accuracy unequalled by any others.
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CAPACITY GURNEY ENDURANCE

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Jamestown, N. Y.

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MOTOR WORLD

A Trade Paper Giving the World's Motor News

Volume XL
No. 3

New York, July 15, 1914

Ten cents a copy
Two dollars a year

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Safe, light, strong, fast, lithe and economical

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Pierce-Arrow cars are built in three chassis sizes, 38, 48 and 66 horse-power. These chassis are equipped with many types of open and enclosed bodies, including a runabout with interchangeable Victoria and coupe top.

THE PIERCE-ARROW MOTOR CAR COMPANY

BUFFALO NEW YORK

Published Weekly by the Motor World Publishing Company, 231-241 West 39th St., New York

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All three mounted exclusively on F & S Ball Bearings, defeating in this, the world's classic road race, the best racing creations of France, England, Italy and Switzerland, over a decidedly winding country circuit of 23.3 miles of 20 laps.

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In this German Mercedes win;
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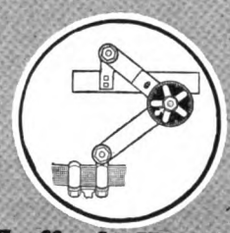
Hartford Cushion Springs insure the degree of flexibility which most automobile springs lack. These comfort-conserving devices *increase* flexibility and provide for easy riding on average roads just as effectively as Truffault-Hartford Shock Absorbers *control* excessive flexibility and provide easy riding on rough roads. In combination, these devices offer *super*-comfort on *all* roads under *all* conditions. Hartford Cushion Springs eliminate the continual annoyance and discomfort of travel over small ruts and bumps, car tracks, cross-walks, cobblestones, etc. They are compact and unobtrusive, of the finest material and workmanship, and easily applied to any car. Four Models, $35, $30, $25. Special Ford Type, $16.



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Guarantee: *"Money back if not satisfactory." Under this broad policy all Hartford products are sold. Any article of our manufacture not proving satisfactory after 30 days' trial from date of purchase, can be returned and the purchase price will be refunded.*

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Manufacturers of Hartford Electric Starting and Lighting System

Branches and distributors in all principal cities of United States and Canada — Dealers everywhere

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CORBIN-BROWN SPEEDOMETER

"The Speedometer of Absolute Accuracy"

is made in accordance with the same high manufacturing standards which for more than half a century have characterized all products of the Corbin-Screw Corporation.

Its centrifugal principle was not adopted until it had been proved irrefutably correct by exhaustive experiments in government laboratories.

To this principle, the Corbin-Brown owes its remarkable accuracy during all degrees of heat and cold and in the presence of electrical influences.

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Furthermore, from the sale of the first speedometer the Corbin-Brown has been backed by the fairest guarantee ever given. Unlike other speedometer guarantees, this guarantee has never been changed. It covers a full year of service.

Investigate the Corbin-Brown today!
Write for Catalogue.

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THE AMERICAN HARDWARE CORPORATION, Successors

NEW BRITAIN, CONN.

BRANCHES: **New York** **Chicago** **Philadelphia**

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The fact that he couldn't swim wasn't important to the passenger until he fell overboard. The fact that your Kelly-Springfield Tube floats when you put it in water isn't important to you until you realize that this means that real rubber has gone into that hand-made tube.



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Bering Tire & Rubber Co., Houston, Texas.
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Southern Hdwe. & Woodstock Co., Ltd., New Orleans, La.
Atkinson Tire & Supply Co., Jacksonville, Fla.
Central Rubber & Supply Co., Indianapolis, Ind.
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K. & S. Auto Tire Company, Limited, Toronto, Can.
Todd Rubber Co., New Haven, Conn.
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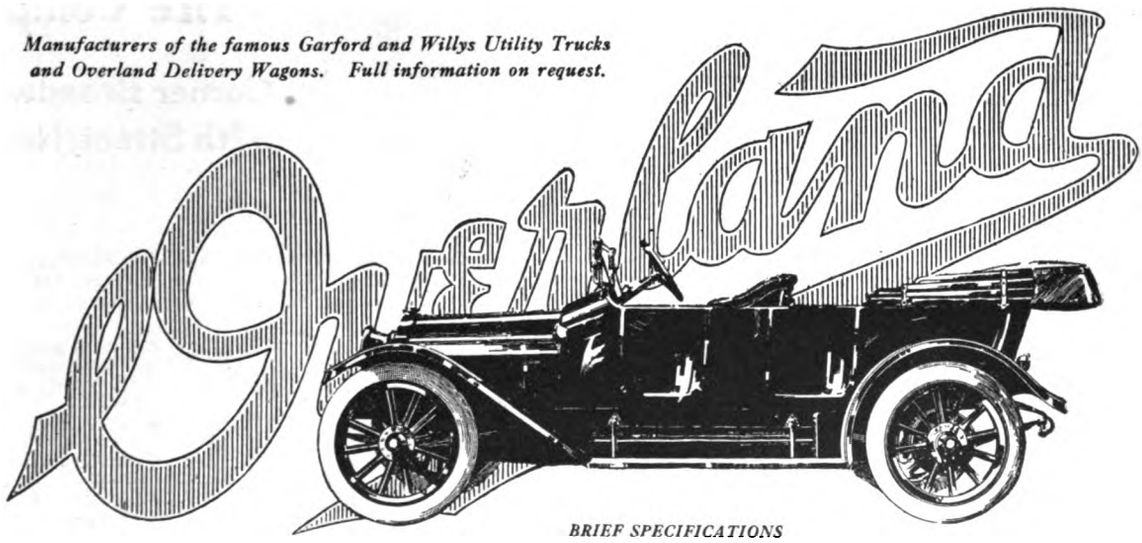
Completely equipped
$1075 with electric starter and generator. Prices f. o. b. Toledo

¶ Nearly fifty million dollars has been invested in 1914 Overlands. When the American public spend such a tremendous amount on one single car it must clearly indicate in which car you get the most value for the least money. *Buy an Overland and save money.*

Our dealer will call for you any time and give you a thorough and instructive explanation and demonstration. Handsome catalogue on request. Please address Dept. 50

The Willys-Overland Company, Toledo, Ohio

Manufacturers of the famous Garford and Willys Utility Trucks and Overland Delivery Wagons. Full information on request.



BRIEF SPECIFICATIONS

Electric head, side, tail and dash lights
Storage battery
35-horsepower motor
High-grade speedometer
Clear-vision, rain vision, windshield
Electric horn
33 x 4 Q. D. tires
114-inch wheelbase
Mohair top, curtains and boot

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MOTOR WORLD

Vol. XL New York, U. S. A., Wednesday, July 15, 1914 No. 3

65% INCREASE IN SALES BY 18 DETROIT DEALERS

Cars Sold Total 10,236 and Not All Returns In—Lack of Cars Apparent—Whole Local Trade Highly Optimistic for the Future.

Eighteen Detroit motor car dealers have sold 10,236 cars during the first half of this year; this represents an increase of approximately 65 per cent. as compared with the business done in the first six months of a year ago.

That more than 10,236 cars were sold all told is made plain by the fact that not all the dealers would make public the amount of business done, and if 1,200 cars are allowed for these it makes a total of 11,436 sold from January 1 to July 1 by Detroit dealers alone. Many of these dealers could not get all the cars they wanted, otherwise 1,800 more machines would have been sold.

Five per cent. of the Detroit dealers have felt the business depression very strongly during the past six months, but the remaining 95 per cent. have not felt it.

Nearly 700 Maxwells were sold locally during the first six months of the year, this being 100 per cent. ahead of last year, and it would have been 150 per cent. higher if cars could have been had.

C. C. Starkweather, manager of the Buick Detroit branch, says they were sold out by March 16 and that the business of the first three months of this year was better than for the first six of a year ago. Since March 16 orders were refused for 216 cars and already orders have been booked for 126 of 1915 models.

Local Hupmobile sales are 40 to 45 per cent. ahead of a year ago. T. J. Doyle, Saxon agent, in four months has sold 400 cars. M. A. Young, Reo and Mitchell dealer, has never had a better year and has handled 600 cars in his state territory. In June over 200 cars were disposed of. To date business is 65 per cent. better than a year ago.

Overland business in Detroit is 100 per cent. better than a year ago. In five counties just a few less than 600 cars have been sold, and of these, 60 per cent. in Detroit. In the last two months the local Overland Motor Car Co. has done over $200,000 worth of business, and it would have been 25 per cent. greater if more cars could have been had.

Winton business has increased in the last six months 50 per cent. H. L. Davies, head of the Krit branch, has disposed of as many cars in the last six months as in the 14 months preceding January 1, 1914, less five. L. Williams, Cartercar, reports 25 per cent. business increase.

Business at the Ford branch has grown 60 per cent. over a year ago. June is 100 per cent. over June, 1913. Five thousand two hundred cars or 2,200 more than last year, were sold in the entire state less five counties around Grand Rapids and also the upper peninsula.

Business in Chevrolet cars is 50 per cent. ahead of last year. The Oldsmobile business is 25 per cent. better. E. Bemb, of the Bemb-Robinson company, reports Hudson sales 100 per cent. ahead of last year. Oakland shows 20 per cent. increase.

(Continued on page 10.)

Cadillac Men to Make Carburetters.

The Johnson Carburetor Co. has been organized in Detroit by C. F. Johnson, expert carburetter engineer of the Cadillac Motor Car Co.; Harry Potter, sales manager of the McCord Mfg. Co., and Rex Johnson, production manager of the Cadillac Motor Car Co. The plant is located at 272 Harper avenue. H. W. Farr is sales manager, with offices in the Union Trust building.

BOSCH AND RUSHMORE ARE MERGED IN ONE BUSINESS

Magneto Maker Takes Over Entire Rushmore Business—Will Continue Both Plants—Rushmore Service From Bosch Stations.

Effecting what is undoubtedly one of the most important mergers in the motor car industry, the Bosch Magneto Co., New York, on July 11 took over, lock, stock and barrel, the business and extensive plant of the Rushmore Dynamo Works at Plainfield, N. J. Henceforth, the Rushmore plant will be continued as the Rushmore Works of the Bosch Magneto Co. Both the Plainfield plant and the large new works of the Bosch company in Springfield, Mass., will be operated in conjunction and hereafter the service requirements of owners of Rushmore electric lighting and engine starting equipment and the distribution of Rushmore products will be cared for through the 239 service stations which the Bosch company has established in all of the principal cities.

The new arrangement grows out of the immediate requirements of the Bosch company for greatly increased manufacturing facilities; for in addition to continuing the electric lighting and engine starting equipment that heretofore has borne the Rushmore nameplate, the Bosch company has very considerably enlarged its own line of electric lighting and engine starting equipment which was brought out late last Fall but which has not been very aggressively pushed up to the present time. This equipment is now ready for quantity distribution.

Two distinct types of electric lighting and engine starting equipment will be produced. One of these is to be known as the Bosch system and the other, which is virtually a continuation of the Rush-

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more apparatus, with such refinements as may become necessary, is to be known as the Bosch-Rushmore system.

In the Bosch system the generator is regulated with the aid of a carbon particle device which is attached to the dash; the starting motor is direct connected to the gasolene motor through the intermediary of an overrunning clutch and suitable gears. But one size of starting motor will be produced, though several sizes of lighting generators, all of the 12-volt type, and varying in the matter of capacity, are included in the line.

In the Bosch-Rushmore system, the generator is regulated through a tiny coil of iron wire, which heats as the current value increases and shunts part of the current through a supplementary coil, weakening the field. The starting motor operates through gearing cut in the periphery of the engine flywheel, the armature shaft sliding longitudinally under magnetic influence and drawing the gears into mesh. Several sizes of starting motor will be produced to fit the various size gasolene motors. For the present, at least, the Bosch-Rushmore system will be built for 6 and 12 volts.

In addition to continuing all the Rushmore motor car accessories, the Bosch company will continue all the other Rushmore products, including searchlights, lighting systems for railroad trains, motor boats, etc., as well, and it is planned to push this business vigorously.

Although the details of the management of the two plants have not yet been perfected, it is not unlikely that C. M. Wild, at present superintendent of the Springfield plant, will have general supervision of the Plainfield works as well and will split his time between the two. At the same time it is likely that S. W. Rushmore, who developed and brought out the Rushmore lighting and starting system and who is largely responsible for the success of the company, will retire from active participation in the affairs of the combine. Victor Kleisrath, chief engineer of the Bosch company, will remain in that capacity.

The Rushmore company is one of the oldest concerns in the electrical industry and during the past 20 years has specialized in the production of dynamos for car lighting, small electric generators, arc lamps and electrical metallurgical devices. During the past year its electric lighting and engine starting equipment has been adopted as standard by a considerable number of foreign as well as American manufacturers of motor cars.

KLAXON MOVES AGAINST BROOKLYN CAR DEALER

Charges Sale of Newtone Horn Said to Infringe Patent Issued in April—Newtone Will Defend Suit.

The Lovell-McConnell Mfg. Co., Newark, N. J., has brought suit against Julius Bindrim, a Brooklyn dealer in automobile supplies selling Newtone and Newtone Superior horns. The plaintiffs allege infringement of patent No. 1,094,403, granted April 21, 1914, and covering a nonrigid coupling between the driver and diaphragm of an automobile horn.

These improvements are intended to render the sound less harsh and at the same time to reduce the wear and tear on the diaphragm. The Newtone and Newtone Superior horns referred to were put upon the market since the beginning of the Lovell-McConnell suit against the Automobile Supply Mfg. Co.

The Automobile Supply Mfg. Co. is defending the suit against Bindrim in the same manner in which it has defended all suits brought against its dealers.

Walpole Sale Again Postponed.

The receiver's sale of the Walpole Tire & Rubber Co., Walpole, Mass., which was scheduled to occur Wednesday, July 8, was again postponed. This is the third time that a postponement has been ordered. The sale is now scheduled to take place August 12, the postponement having been made at the request of the stockholders' reorganization committee, which is headed by Curtis G. Metzger. Metzger states that there is now a plan on foot whereby the reorganization committee will buy in the property in order to protect its creditors and stockholders.

In the meantime the receivers have filed their report, which shows a net profit of $83,801.03 for the five months ending May 21. The total earnings amounted to $112,359.64 on sales aggregating $708,486.90. The receivers report total assets of $406,442.92 for the Walpole Rubber Co., Ltd., of Granby, Que., and assets of $342,074.69 for the Walpole Shoe Supply Co. The latter has a surplus of $34,688.44, and the former a surplus of $27,323.05.

Preparing to Reorganize Cutting.

L. S. Erbes, who recently purchased the good will, stock, repair parts and equipment of the defunct Cutting Motor Car Co., Jackson, Mich., is reported to have decided to transfer the stock of the bankrupt Milwaukee Motor Co., Milwaukee, Wis., to Jackson and reorganize the Cutting concern. At present work is being rushed for the building of several hundred light cars to be named the Bull Moose Cuttings. Erbes has also purchased the plant, patterns and machinery of the Continental Engine Co., of Dallas City, Ill., and will have all the material shipped to Jackson.. If the plans turn out right, Erbes will also remove his St. Paul, Minn., business to that city.

Frontier Wins Spark Plug Decree.

In the case of the Frontier Specialty Co. against the Heinze Electric Co. for infringement of Simms Patent 642,167, covering a priming spark plug construction, final decree has been entered in favor of the complainant. The court held that the patent is good and valid as is the title of the complainant and that the defendant infringed claims 1 to 6 inclusive and the defendant has been enjoined from further infringement of the patent. All question of damages, etc., has been settled.

Refuses to Enjoin Cadillac.

The suit which W. S. Austin has brought against the Cadillac Motor Car Co., Detroit, Mich., charging infringement of the Austin two-speed rear axle patent, will come up for final hearing August 11. In the meantime Judge Sessions, sitting in the United States Court in Grand Rapids, Mich., has refused to grant an injunction restraining the Cadillac company from constructing or making use of its two-speed axle, which is a feature of the car.

Order Sale of Alpena Plant.

Referee in bankruptcy George A. Marston has issued a notice that the plant of the bankrupt Alpena Motor Car Company will be put up for sale at public auction by W. A. Denton, trustee for the creditors, July 16, and that sale will be confirmed at a creditors' meeting to be held the next day at Referee Marston's offices, 438 Shearer Block, Bay City, Mich.

Monihan Out of Cole Company.

John Guy Monihan, who for the past year has been associate director of sales and advertising of the Cole Motor Car Co., Indianapolis, Ind., has resigned that position and severed his connection with the Cole company. Before reentering the motor car industry, he will take a lengthy vacation.

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U. S. LIGHT AND HEATING PUT IN RECEIVERS HANDS

Humpage, Head of Stockholders' Committee, Charges Illegal Stock Deals—Assets, $3,000,000; Liabilities, $900,000.

Upon a petition of Frederick R. Humpage, who with Guy M. Walker and J. A. Fleicher, operating as a stockholders' committee, has conducted the affairs of the United States Light & Heating Co., Niagara Falls, N. Y., since the first of the year, Judge John R. Hazel, in the Federal court in Buffalo, on Monday appointed Henry Ackerman, Walker and James A. Moore, receivers for the company under a bond of $100,000.

In his petition, Humpage claims that during the past five years directors of the company, which is a Maine corporation capitalized at $16,000,000 and has assets valued at approximately $3,000,000, have issued in an illegal manner $9,500,000 worth of stock. Specifically the issuance of stock in five particular cases is claimed by the petitioners and the complainants as having been made in violation of the law.

The board of directors includes William M. Hawley, Walter S. Crandall, Charles A. Starbuck, Allen Smith, Theodore P. Shonts and John A. Fleicher.

In the petition no request is made that the plant be shut down. On the contrary, evidence was introduced to show that contracts for a considerable amount of business have been offered and that money sufficient to meet all obligations can be secured within the next several months.

The petitioners ask that a thorough review of the operations of the several defendants in the action be made and that this be followed by an adjustment of the company's affairs. It is claimed that the assets aggregate $3,000,000 with reported liabilities of $900,000.

Twenty-three Districts in Jeffery Field.

At the conference of Jeffery salesmen, which was held at the Thomas B. Jeffery Co.'s factory in Kenosha, Wis., last week, a new plan of organization calling for a division of the country into 23 districts, each in charge of a district representative working under the general direction of the factory and sales department, was put in operation.

Under the new plan these 23 district representatives will appoint dealers, determine the extent of territories and exercise general supervision over the business of the Jeffery company in their respective districts. The 23 representatives who were appointed are as follows, the territory being given first and the headquarters last:

C. G. Anderson, N. Illinois, Peoria, Ill.; G. N. Bliss, Kansas and Nebraska, Kansas City, Mo.; John Carlberg, Oklahoma and Arkansas, Oklahoma City, Okla.; J. E. Corby, Indiana, Indianapolis, Ind.; A. E. Creeger, Western Ohio, Tiffin, Ohio; C. S. Culp, New York, Rochester, N. Y.; W. H. Dailey, S. Illinois, Kenosha, Wis.; L. H. Glenn, W. Iowa, Omaha, Neb.; H. C. Hart, E. Iowa, Des Moines, Ia.; T. W. Johnston, N. and S. Carolina, Columbia, S. C.; E. W. Milburn, California and Nevada, San Francisco, Cal.; R. R. Minton, Colorado, Utah and Wyoming, Denver, Colo.; G. B. Muma, Montana and Canada, Winnipeg, Man., Can.; R. L. Newton, Va., E. West Va., D. C., Richmond, Va.; L. E. Rood, Wisconsin, Kenosha, Wis.; Jno .A. Rose, Florida and Georgia, Jacksonville, Fla.; H. D. Snyder, Michigan, Grand Rapids, Mich.; B. F. Spencer, E. Ohio, W. West Va., W. N. Y., Warren, O.; C. R. Spencer, Alabama, Miss. and Tenn., Memphis, Tenn.; H. A. White, Texas and Louisiana, New Orleans, La.; W. Ross Eaton, Arizona and New Mexico, Phoenix, Ariz.; H. A. Burgess, Idaho, Washington and Oregon, Portland, Ore.

Reed Made Cowles-McDowell Engineer.

W. S. Reed has resigned as chief engineer of the Norwalk Motor Car Co., Martinsburg, W. Va., to assume a similar position with the Cowles-MacDowell Engineering Co., Chicago, Ill. The latter company will bring out a six-cylinder car for 1915.

ANOTHER PATENT ADDED TO EIGHT NOW HELD BY KARDO

Another patent has been added to the eight which now are controlled by the Kardo Co. This patent was issued July 14 to Edward P. Cowles, who at one time was employed by the Packard company in Warren, O., and covers an interchangeable wire wheel.

The application for the patent was filed as long ago as 1912, but inasmuch as it is an offshoot of an earlier application which was filed in 1901, its date is carried back 13 years.

Claim 7 of the patent shows clearly that it is calculated to cover the interchangeability feature of wire motor car wheels.

This claim is as follows:

"In a motor vehicle, the combination with a front and a rear stationary axle, of a steering spindle pivoted at the end of the front axle, a hub-receiving member surrounding and freely rotatable upon said spindle, a driven hub-receiving member at the end of said rear axle, and wheels having hubs adapted to be removably secured, interchangeably, to said hub-receiving members."

MOTOR OPERATORS CLAIM UNFAIR DISCRIMINATION

Charge at Dock Hearing That Ferry Companies Unduly Favor Horse Vehicle—Nine Advantages of Motors.

That there is unfair discrimination between the charges made for ferrying horse-drawn vehicles and motor vehicles by the various ferry operators whose boats ply to and from Manhattan Island, is charged by four New York associations, representatives of which were present at the hearing which was held before Dock Commissioner R. A. C. Smith on Wednesday last, July 8. These associations are the Motor Truck Club, the Merchants' Association, the National Automobile Chamber of Commerce and the Electric Vehicle Association of America.

These four associations, in their presentation of the case, point out that the existing ferry rates are antiquated in that they were promulgated before the day of the motor vehicle and that they work a hardship on motor vehicle operators. They have drawn up nine reasons why the ferry charges for motor vehicles should be lower. These follow:

1. Motor wagons and trucks occupy less space than horse-drawn vehicles, permitting a greater number on the boats and therefore a larger amount of revenue.

2. Motor truck tires are wider than those of horse vehicles, thus distributing the weight more evenly on deck timbers.

3. Motor vehicle tires are universally of rubber, thus causing less wear and tear upon deck timbers.

4. When on the boat motor trucks are absolutely stationary, whereas horses are constantly in more or less motion, stamping upon the deck timbers with their iron-shod hoofs, causing unnecessary wear.

5. Motor trucks while on the ferries have their brakes locked and there is no liability of accident due to sudden stopping or starting of the boat, as is the case with horses.

6. Motor trucks more more rapidly in stopping and starting, and the loading and unloading of the ferryboats is therefore subject to less delay from this standpoint.

7. Motor trucks are never inconvenienced by any incline of the approach to or from the ferryboat due to the falling of the tide, and therefore eliminate the necessity of a power windlass, which has been necessary to aid the horse vehicles.

8. The deterioration of floor timbers from chemical action resulting from the presence of horses is eliminated with motor-driven vehicles.

9. The presence of motor trucks upon the ferries eliminates the necessity of any one man or number of men whose duty it is to clean up the refuse which the presence of horses requires.

The ferry operators were unprepared to answer the charges, although well represented, pleading lack of study of conditions affecting ferry tolls on the

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two classes of vehicles. In the face of accurate figures as to rates on the different ferry lines and how these resulted in overcharging motor vehicles, submitted by the Merchants association, the Trunk Line Association, representing the ferry owners, asked for an adjournment until such time as a careful study on their part should have prepared them to make an intelligent answer.

In particular, the charges were that ferry tickets for the higher rates applying to motor trucks were sold in quanties at a less reduction than were those for the lower rates applying to horse vehicles, so that it was not possible for truck owners to effect the savings by wholesale ticket purchase that horse owners might. The rates themselves were said to lack uniformity on the different lines.

A committee was formed by the Trunk Line Association to carry on an investigation of the rates as tabulated by the Merchants' Association and to report at a later hearing, to be held on or about July 20.

As a result of the hearing it is not unlikely that rates will be reduced on motor vehicles.

The five representatives of the Motor Truck Club were George H. Duck, president; David C. Fenner, vice-president; Ernest K. Coulter, legal counsel for the club; Charles E. Stone, general manager and Emanuel Weil, an active member representing the truck owner-members, A. Jackson Marshall, executive secretary of the Electric Vehicle Association, represented that body in behalf of electric truck interests, and J. I. Marvin, traffic manager of the Chamber of Commerce, appeared in behalf of the truck manufacturers.

Longuemere Prepares to Push Sale of Imported Carburetters.

Following the litigation between the Stromberg Motor Devices Co. and the Longuemere Carburetor Co. in the United States District Court in New York city, the Longuemere company is preparing to push the importation and sale of its foreign-made carburetters. A preliminary injunction which was issued by Judge Hand affects only the making of carburetters in America. The Longuemere company is permitted to import and sell under a $10,000 bond which it will file before July 22. "The Longuemere Carburetor Co.," states Ludwig Arnson, one of the proprietors, "is convinced it does not infringe the Richard and Ahara patents and, believing that this will ultimately be demonstrated, is preparing to push sales of imported Longuemeres."

"GET TOGETHER" SPIRIT AT OAKLAND CONVENTION

Branch Managers, In Four-Day Meeting, View New Models—To Produce in 10 Months 40% More Than In Year.

For 4 days last week representatives of the Oakland Motor Car Co., Pontiac, Mich., were entertained at the Oakland factory. The occasion of the gathering was the annual convention of branch managers and branch house travelers which was opened July 8 and continued through July 11.

Every section of the country was represented at the four day's conference, in which a "get-together" and "get-acquainted" spirit predominated, for there are many new faces in the new Oakland organization.

Vice-president and General Manager C. W. Nash, who is also president of General Motors Co., opened the conference with an address at the first business meeting. The new 1915 Oaklands were then driven before the assemblage for their first glimpse of the new models and a talk was given by N. E. Wahlberg, chief engineer of the Oakland company, who designed the 1915 cars.

Sales Manager Warner then took charge of the meetings, which took the form of a thorough discussion of the new models, the sales situation and plans for the coming year and the social activities which go with such occasions.

Thursday the visitors were conducted on a tour of the Oakland plant and were made familiar with the various processes of construction. The Northway Motor & Mfg. plant in Detroit was visited Friday, A. F. Knobloch, vice-president and general manager of the Northway company, being in charge.

It was stated that at least 12,000 cars will be built and this number will undoubtedly be increased. In 1914 orders were booked for 2,000 more cars than were produced. In the Oakland plant plans are being prepared to produce in the next 10 months 40 per cent. more cars than it has ever produced in one year.

Out-of-town guests were: W. R. Tracy and A. F. Knobloch, Detroit; L. B. Sanders, Boston; R. H. Losey, Minneapolis; F. King, Los Angeles; T. S. Johnston, Philadelphia; J. G. Roberts, Maquoketa, Ia.; G. O. Wildhack, Indianapolis; L. S. Shoup, Indianapolis; R. J. Henderson, Toronto, Ontario; A. P. Ten Brook, Kansas City; E. J. Kilburn, Chicago; J. T. Simmons, San Antonio; C. L. Zutavern, Dallas; F. S. Odell, Pittsburgh; F. C. Wood, Cleveland.

Detroit Section for E. V. A.

For the purpose of further promoting the popularity of electric vehicles, both for pleasure and for commercial usage, a Detroit section of the Electric Vehicle Association of America has been formed, of which J. W. Brennan, purchasing agent of the Edison Illuminating Co., Detroit, Mich., is temporary chairman, election of officers not having taken place yet.

The active members of the Detroit section of the Electric Vehicle Association of America are: W. C. Anderson, Anderson Electric Car Co.; John Gillespie, Century Electric Car Co.; J. W. Brennan, Edison Illuminating Co.; C. H. Murphy, Murphy Power Co., and John E. Lansden, General Motors Truck Co. The associate members are: J. C. Ayers, General Motor Truck Co.; W. H. Conant, Gould Storage Battery Co.; W. E. Holland, Anderson Electric Co.; Chas. W. Terry, Electric Storage Battery Co.; Louis B. Fijux, Willard Storage Battery Co.; Max G. Hillman, Willard Storage Battery Co.; W. K. Chilcott, Frank A. Whitten and Stephen B. Howard, General Motors Truck Co.

Jeffery Adds Well-Known Dealers.

Two important additions to the dealers' organization of the Thos. B. Jeffery Co., Kenosha, Wis., were made during the past week, announcement having been made of the appointment of the Frank C. Riggs Co., of Portland, Oregon, as Jeffery distributers for that state, and McArthur Brothers, of Phoenix, as Jeffery distributers for Arizona. Both have attained success as Packard dealers in their respective territories. Frank C. Riggs is widely known in the industry, having formerly occupied the position of vice-president and sales manager of the Fisk Rubber Co., later holding the position of sales manager of the Packard Truck Department.

Havers Main Plant Consumed.

Damage amounting to about $135,000 was done to the main plant of the Havers Motor Car Co., Port Huron, Mich., by fire Wednesday, July 8. Several finished cars, chassis, bodies and parts were consumed. The origin of the fire has not yet been ascertained, though it is thought to have originated in the assembly room. Immediately after insurance matters are adjusted, it is the intention to rebuild the plant.

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FUEL FROM MOTH BALLS AT TWO CENTS A GALLON

Cars Run Well on Product Made Principally of Napthaline and Water —Tests Made on Indianapolis Speedway.

Synthetic gasolene having all the properties of the natural liquid can be manufactured at a cost of about 2 cents a gallon, according to John Andrews, McKeesport, Pa., the inventor of the process. The principal ingredients used are napthaline, the white powder of which moth balls are made, and water. Andrews uses small quantities of other substances the nature of which he refuses to divulge, but states that all are cheap and obtainable anywhere.

A quantity of the fluid was distilled by Andrews at the Indianapolis Speedway on July 4; the apparatus used was crude and was set up temporarily in a garage building. To hasten distillation the fluid used was the residue of several previous runs. An hour after lighting the fire a light colorless liquid began to distill out, and in two hours five gallons had been made. The stuff tested 70 degrees Beaume. It was put in a special tank on a National six and showed all the characteristics of gasolene, though it was found advantageous to increase the air supply.

The car, which weighed 3,800 pounds, ran 12.5 miles on a measured gallon of the fluid and had a range of from 4 miles to 55 miles on high; with gasolene testing 64 degrees the car ran 17.5 miles on a gallon and had a range of from 3 to 61 miles on high gear. A Marmon car was run 200 miles on the moth-ball product and there was no appreciable carbon deposit on the valves at the finish.

The tests were made by Carl G. Fisher and a committee of engineers, including Howard Marmon and Walter Marmon, of the Nordyke & Marmon Co.; Hanch, of the Marmon company; Darwin S. Hatch, of Motor Age, and others.

A second distillation was made, using plain water and a larger proportion of chemicals. The product tested 64 degrees; it is explained that the crude apparatus and methods make it difficult to judge the density of the distilled liquid. By altering the proportions in the correct ratios any gravity from 50 to 90 can be obtained, the inventor claims.

Andrews will not divulge the ingredients used besides napthaline and water, and will not permit an analysis of the fluid, which appears to have all the characteristics of gasolene except the smell. The inventor is a Portugese-American, formerly a sailor and later a mill worker in Pittsburgh. It is stated that he recently sold to the Government of the United States a patent on an armor plate, for $350,000.

Synthetic gasolene is not unknown as laboratory product, but its cost has been so high that it has not heretofore received much consideration as a commercial possibility.

Federal Rubber Increases Plant.

Officials of the Federal Rubber Mfg. Co., Milwaukee, Wis., fittingly celebrated the third anniversary of the company's existence on July 1 by issuing orders for the erection of new factory buildings to cost over $500,000. Work is already under way on new structures, which will be in the form of added units to the present plant. When completed the new buildings will mean an increase of 150,000 square feet of floor space, making 450,000 square feet.

The new buildings will consist of a separate building 60 x 497 feet with six stories and basement, and additions to four of the present buildings—all 50 x 50 feet and five stories in height. Brick and mill construction will be used throughout. Among the buildings on which the work has been started is the addition to the power plant. This will contain two new boilers of the latest tube type, capable of delivering 1,000 horsepower to the dynamos.

Motor Car Securities Quotations.

	July 11, 1913		July 11, 1914	
	Bid	Asked	Bid	Asked
Ajax-Grieb Rubber Co., com.	150	165	220	..
Ajax-Grieb Rubber Co., pfd.	94	99	98	..
Aluminum Castings, pfd.	97	100	98	100
Chalmers Motor Co., com.	118	125	101	103
Chalmers Motor Co., pfd.	98	102	94	95
Firestone Tire & Rubber Co., com.	285	300	300	305
Firestone Tire & Rubber Co., pfd.	103	104	108½	110
Garford Co., pfd.	85	95	75	85
General Motors Co., com.	27¼	30¼	91½	92½
General Motors Co., pfd.	73	77	92½	93
B. F. Goodrich Co., com.	27	28½	26½	27
B. F. Goodrich Co., pfd.	90	92¾	88½	89
Goodyear Tire & Rubber Co., com.	325	345	166	170
Goodyear Tire & Rubber Co., pfd.	98½	100	96	97½
Gray & Davis, Inc., pfd.	..	..	98	102½
International Motor Co., com.	3	5	..	3
International Motor Co., pfd.	18	25	3	9
Kelly-Springfield Tire Co., com.	..	..	58	59
Kelly-Springfield Tire Co., 1st pfd.	..	..	76	80
Kelly-Springfield Tire Co., 2nd pfd.	..	..	94	100
Lozier Motor Co., com.	15	20	..	19
Lozier Motor Co., pfd.	..	90	..	41
Maxwell Motor Co., com.	2½	3½	14	15
Maxwell Motor Co., 1st pfd.	23½	26	44	45
Maxwell Motor Co., 2nd pfd.	6	8	18	19
Miller Rubber Co.	133	137	138	140
Packard Motor Car Co., com.	..	..	103	112
Packard Motor Car Co., pfd.	..	..	97	100
Peerless Motor Car Co., com.	45	50	10	17
Peerless Motor Car Co., pfd.	..	96	..	50
Pope Mfg. Co., com.	7½	9½	..	1
Pope Mfg. Co., pfd.	30	34	..	3
Portage Rubber Co., com.	..	45	..	30
Portage Rubber Co., pfd.	..	90	..	90
Reo Motor Truck Co.	10	11¼	11½	12¼
Reo Motor Car Co.	19	21	18	19
Stewart-Warner Spdr. Corp., com.	..	..	51½	52½
Stewart-Warner Spdr. Corp., pfd.	..	..	99	101
Studebaker Corp., com.	23¾	26	31½	32½
Studebaker Corp., pfd.	82	88	83	85
Swinehart Tire & Rubber Co.	85	88	85	87
U. S. Rubber Co., com.	59	60	59½	60
U. S. Rubber Co., pfd.	103	104	103	103¾
White Co., pfd.	102	104	107	110
Willys-Overland Co., com.	57	62	90	91
Willys-Overland Co., pfd.	85	90	95	96

PROMINENT MEN IN TRADE WHO ASSUME NEW DUTIES

Resignations and Promotions That Serve to Place Many Workers in New Places—Few of Them Leave the Industry.

L. S. Shoup has been made sales manager of the Indianapolis branch of the Oakland Motor Car Co. Formerly he was connected with the John Deere Plow Company.

Z. C. Elkins has been made manager of the Chicago branch of the General Motors Truck Co., Pontiac, Mich. Previously he represented the company at Pittsburgh, Pa.

Charles B. Voorheis has been appointed sales manager of the Oakland Motor Car Co., of Pontiac, Mich. Formerly he occupied a similar position with the King Plow Co., Peoria, Ill.

T. E. Byrne has joined forces with the sales department of the Premier Motor Mfg. Co., Indianapolis, Ind. Previously he was manager of the used car department of the Cole Motor Car Co.

Hoover Holton, formerly general sales manager of the Empire Automobile Co. and the American Motors Co., of Indianapolis, Ind., has been appointed to a similar position with the Monarch Motor Car Co., Detroit.

F. A. Greene has been appointed manager of the Cole Motor Co. in Des Moines, Ia., which is now a factory branch. He succeeds Frank Weldon, who, however, retains his connection with the company.

A. F. Masury, formerly service manager of the International Motor Co.'s station in New York city, has been made chief engineer of the company. A. H. Leipert, superintendent of service, succeeds to the former duties of Mr. Masury.

C. R. Jones, who has been prominently connected with the commercial car trade in the Southwest for several years, has been appointed district representative for the Lippard-Stewart Motor Car Co., Buffalo, N. Y. He will make his headquarters in Dallas, Tex.

Wallace C. Hood has been made sales manager of the Briggs-Detroiter Co., Detroit. Previously Hood was connected with the Thomas B. Jeffery Co., Chalmers Motor Car Co., Metzger Motor Car Co., and latterly was sales manager of the Standard Motor Truck Co., Detroit.

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Success Depends Upon Your Thoughts

"Study Your Prospects," Says Maxwell Supervisor, to Annual Convention—Car Selling Like Baseball—Managers Inspect the Plant.

Achievement in the business world is the result of well-directed thought. All that we accomplish—all that we fail to accomplish—is the direct result of our own thoughts. True knowledge properly applied is the power behind the throne of the big business of today.

What we do in this little world of ours is the result of our own thoughts. That is one of the things that C. H. Booth, supervisor of Zone 2 of the selling organization of the Maxwell Motor Co., told the 60 Maxwell district salesmen who foregathered at the factory last week from July 6 to 9.

"You have a very serious, responsible job on your hands," said Booth. "You are the men who are supposed to keep the smoke rolling out of the factory chimneys this coming year. It is very necessary before you get back to your respective territories that you hold a little personal convention and take an inventory of yourself. Hold these confidential conventions weekly and see if you are working along the right lines. Keep your mental attitude up to par. Don't lose any time in getting started right—then keep it up—keep ahead of your work.

Cards of Introduction Unnecessary.

"It is a lot easier to keep ahead of your work than to trudge along back of it. Every one of you know what the first blow in a fight means; well, that's the blow we want you to be able to strike when you leave this convention. To be able to strike a solar plexus blow mentally in selling goods, you have to be perfect physically. You need eight hours good rest to drive home convincing arguments. No salesman can radiate prosperity or make a good impression on a responsible business man while walking around with the feeling that he has a cake of cement in his stomach.

"A salesman who understands his product, and who is right physically and is filled with enthusiasm needs no card of introduction—his clear eye and firm hand make it a pleasure for anyone to meet him. Enthusiasm, courage and ambition are the direct result of a clean, wholesome body. Any salesman who continually resorts to a business card as a means of introduction to a prospective dealer is a lukewarm salesman, and a lukewarm salesman on this 50,000-car train won't even toot the whistle.

"Selling anything is a battle, and only the fighters can win—a quitter never did anything but make excuses, and sometimes he doesn't hesitate long enough for that. When you visit a town, call on all prospective dealers, pay particular attention to the horse-drawn vehicle dealer—the firm who for many years has supplied the community with vehicles. When you find the right man say to yourself, I am going to gain his confidence—I am going to sell this man—I want him for a Maxwell dealer, because he is the best man and I have the best line. I have a line which is the biggest dollar's worth of automobile ever offered to the public. I am going to make him want this line, I am going to do the community a favor by getting this dealer. It is for our mutual benefit.

"Go at your man with the right mental attitude and you will win. Because you lose him one day is no reason why next week you won't land him. But you will lose him unless you study him closely. Selling is like pitching ball—if Christy Mathewson threw inshoots all the time they would soon get on to him and bat him out of the box. But Christy studies his opponents and varies the style of ball he throws to the various men. So you must know your man, for no two men can be handled alike; and if they could we wouldn't have a job, for they would send out phonographs.

Work Fast; Don't Let Enthusiasm Die!

"Cut your territory so fine your maps will look like grandmother's prize crazy quilt. It is your only salvation. This is no Tango party we are starting on. It is the biggest job we ever had. Don't worry about what your competitors are doing; be too busy for that. Get in that first blow now and keep it up—work fast—don't let your enthusiasm ever die."

After meeting at the general offices the salesmen were driven to the Oakland avenue plant, where, under the guidance of the driver of the car in which the men rode, a complete visit of the big plant was made, beginning with the small parts end of the machine-shop, thence to the motor assembly, gear cutting, cylinder grinding, heat treating, chemical laboratory, cam and crankshaft departments, the department where motors are belted. Then a visit to the general assembly departments was made, comprising the frame, chassis and body assembly rooms, the final testing and motor block test rooms, the leading platform, the visit ending with a view of the test track.

Every Man Met President Flanders.

There were short talks or lectures by A. Thompson, general works manager, on "Shop Practice"; by A. E. Richmond, superintendent of service, on "Old and New Service Plans and Policies"; by R. A. Miles, chief metallurgist, on "Metallurgy and Heat Treating."

At 8:30 Tuesday morning every district salesman was introduced to President W. E. Flanders.

During the afternoon there were more talks from some of the leading men in the organization. These included: "Thermo-syphon cooling system," by Roy Peed; "Advertising policies," by George B. Van Cleve; "Your daily report form, your expense reports, your dealers' reports for sales promotion work," by C. E. Stebbins; "System in sales," by E. N. Clark, Jr.; "Diverting and releasing shipments," by G. A. Main; "Putting the greatest possible number of dealers in the smallest possible territory," by C. R. Newby.

65% INCREASE IN SALES BY 18 DETROIT DEALERS

(Continued from page 5.)

The Neumann, Lane Co., handling Pierce-Arrow, Chalmers and Rauch-Lang, reports a 25 per cent. increase for the first six months of the year.

The Wetmore-Quinn Co., handling Lozier and Paige cars, has sold 100 more cars in May and June than in these months a year ago.

Grant sales total 165 up to July 1 and George C. Waite, of the local agency says more could have been sold if they could have been had.

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Form Letter Pertinency

"One subject to a letter" is an accepted slogan in form letters going from motor car dealers to prospective customers.

The form letter can be made a very important factor in interesting people in your product, providing the letters constituting the group are drafted to suit the car you are selling and also to suit the people you hope to sell to.

Too many form letters today tell little if anything. They dwell on useless generalities, getting few, if any results. The first of the series is read; perhaps the second, but from then onward they are merely opened and thrown into the waste basket.

Facts, Not Stamps

Any letter that contains facts of real interest will generally be read; it might be said invariably if a 2-cent stamp is carried and probably if a 1-cent stamp is on the envelope.

Recently a real estate party wishing to dispose of a seashore home sent to a limited list a short typewritten letter together with a postal containing a photograph of the home. Both were enclosed in an open envelope with a 1-cent stamp. The letter was so short and to the point that it was read. There were no generalities. Simple facts filled every line. The letter was well paragraphed, making reading very easy. Good results followed.

The moral is that if your letters are short and tell the story they will be read.

Too many people are hypercritical on form letters, because many of them reach their office relating to subjects that they are little if any interested in. The subject of one may be some new tailor in the next block, the opening of a new lunch room, a new place to store winter clothes.

True, such form letters carry little weight, but they are generally opened. It is a dull business man who will not have them opened. Every business man who hopes to make use of form letters at one time or another should see to it that every missive of this nature reaching his office is placed on his desk.

Form Letters Are Read

Then, let the form letter arrive which contains mention of something that you are interested in and see how readily it is read. If you are in the market for a used car and a notice comes containing a picture of one car, and stating briefly who previously owned it, how far is has been driven, what condition the tires are in and what is the price. Such a story tersely told will bring results. There is a ring of business about it.

But contrast this with the blazing red folder announcing "Greatest used car bargains on earth." At once you become skeptical. The missive in itself is repulsive. It does not savor of business. It is a failure. Such colors are satisfactory on the billboard where they are toned down by distance and outside life but they are entirely out of place in your business office and more so in your home. When such a firebrand reaches the home you see that it is carefully buried in the bottom of the waste basket, you do not even want your neighbors to know that you are on such a mailing list. Your innate pride rebels.

Draft Series in Advance

But the form letter, or the series of form letters, has its mission to fulfill. The series should be drafted well in advance. When drafting them consider the nature of the car you have to sell and then the class of buyers. Give these two factors careful study. The series of letters that will sell a cyclecar will fail in selling a $2,500 machine.

In telling your story make each letter on but a single subject. Do not mix matters. You cannot get as much into a man's mind, or a woman's either, by a form letter as you can in a 2-minute conversation. Do not try it. Let the series do that.

Do not begin your letter with generalities but get right down to business. Get an important fact into the opening sentence. Make the first line a real magnet. Have a story in it. Make sure it is read. If the first line of the letter is not read the letter will not be read at all.

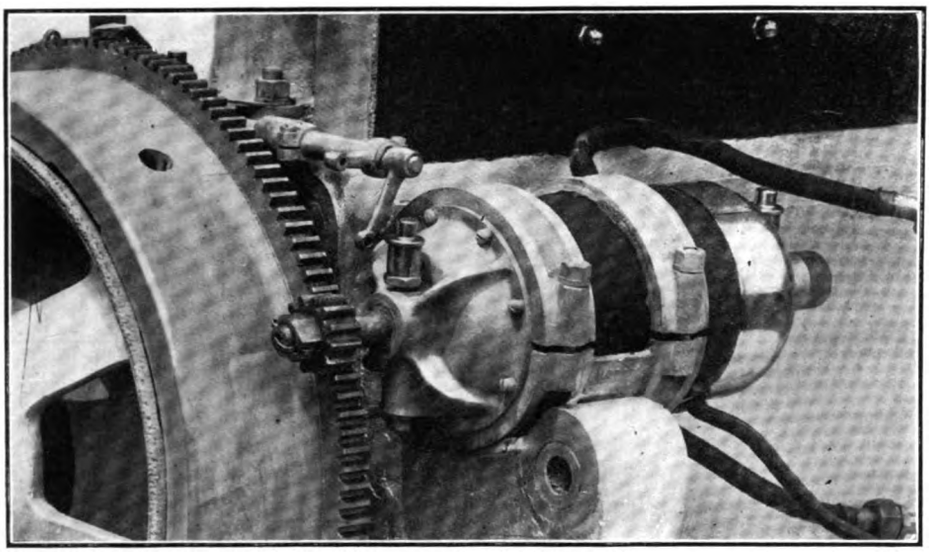
To get the interest of readers you must state a fact, consequently do not lose any time but get it right out at the start. Then go on to further analyze or amplify it.

Make the letter short, one-half sheet is better than three-quarters sheet. Under no consideration make it a brim-full sheet; it will not look well; it will be too burdensome. The receiver will cast it aside.

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Bosch Starting System Is Simple

Motor Connected Through Gears and Over-Running Clutch Operates on 12 Volts—Magnetic Switch Employed—Few Refinements in Lighting System—Bosch-Rushmore Practically Unchanged.



APPLICATION OF BOSCH-RUSHMORE STARTER TO MARMON MOTOR

With the consolidation of the Bosch Magneto Co., New York, and the Rushmore Dynamo Works, Plainfield, N. J., the capacity of the Bosch company has been practically doubled and the new electric lighting and engine starting equipment which was formally announced late last Fall but which has not been aggressively advertised or pushed up to now, is ready for quantity delivery.

Although the Rushmore plant at Plainfield, N. J., and the new Bosch plant at Springfield, Mass., are to be operated in conjunction and probably under the supervision of one head, the two electric lighting and engine starting systems that are to be produced are quite different in their essential characteristics.

The first of these systems, the new Bosch lighting and starting system, embraces a separate Bosch starting motor, which is arranged to drive the gasolene engine through the intermediary of an over-running clutch and gearing, a separate generator and a separate magneto for ignition purposes.

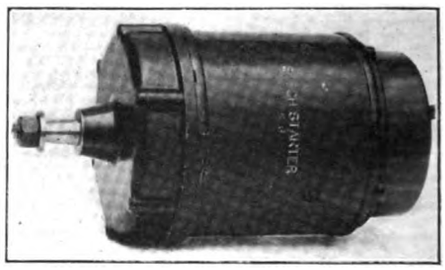
The second system, which is a continuation of the well-known Rushmore system with such refinements as may have been found necessary to bring the equipment up to the high Bosch standard, also consists of three separate units —lighting, starting and ignition. This will be known as the Bosch-Rushmore system.

Except that it conforms to the exceptionally high Bosch standard of construction and finish, the Bosch starting system does not differ greatly from others of its general type now upon the market. In it everything has been designed and constructed and finished with the minutest care.

The starting motor itself is comparatively small. Needless to add, the machine is series wound. But one size of motor will be constructed and this operates on 12 volts, current being supplied from a Bosch-Elba battery of 50 ampere-hours capacity. The motor weighs 35 pounds and measures 5.85 x 10.25 inches.

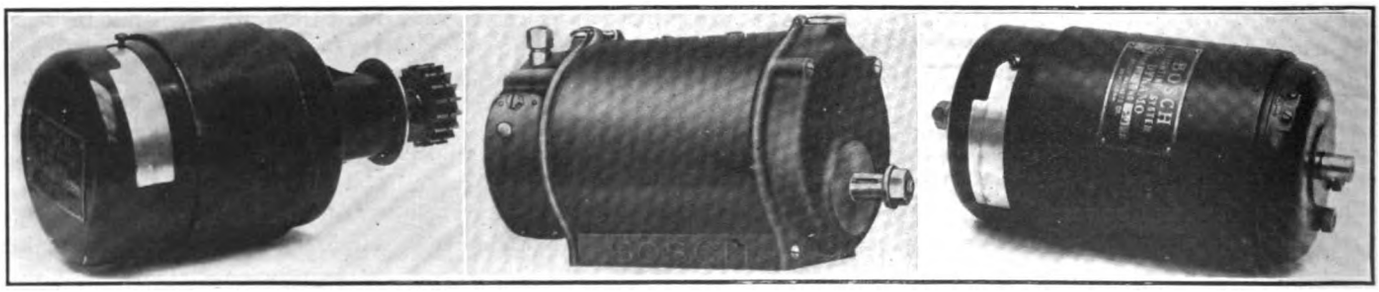
The Bosch starting motor is intended principally for the class of installation where it is impossible to get at the flywheel of the gasolene engine, as is the case with unit power plants in which the flywheel is enclosed. The connection to the gasolene engine is made through simple gearing to the most convenient point upon the engine—either the timing gear train or the magneto or pump shaft—and an overrunning clutch. Thus the gasolene engine can never drive the starting motor.

The motor itself is completely enclosed after the modern practice, but ample provision is made for the inspection, cleaning, etc. At the brush end, there is a sliding cover which reveals a large aperture through which the brushes may be inspected or cleaned. The brushes are of carbon and, it is stated, will need attention only about once a season. And, inasmuch as the armature shaft rotates in ball bearings, the requirements of the machine in the way of lubrication will be exceedingly meagre.



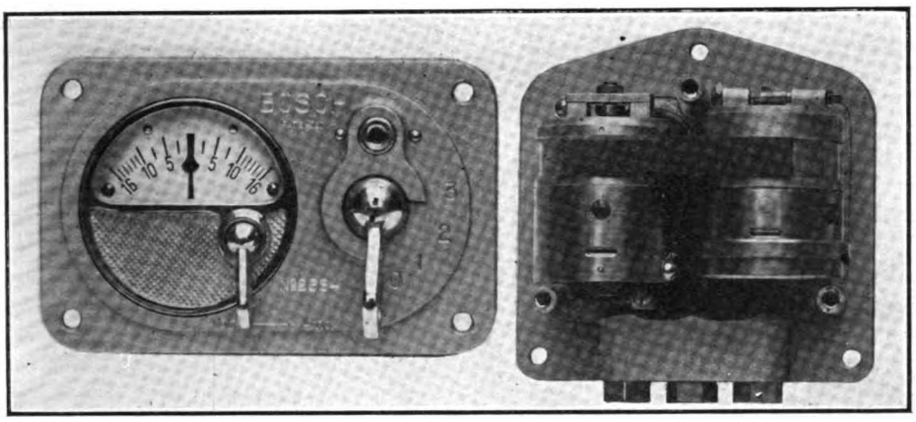
BOSCH 12-VOLT STARTING MOTOR

The connection between the battery and the starting motor is made through an automatic magnetic switch, which is controlled through what is termed a pilot switch placed upon the dash. This pilot switch, which is little more than a button—the button may be removed,



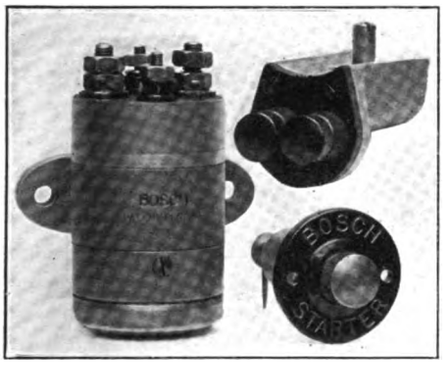
THREE SIZES OF BOSCH LIGHTING GENERATORS, THE ORIGINAL TYPE BEING IN THE CENTER

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HORIZONTAL TYPE COMBINATION SWITCHBOARD AND CONTROL BOX SHOWING CARBON PARTICLE REGULATOR

however, thus providing a positive lock on the system—closes the circuit between the battery and the magnetic switch, which is completely enclosed and may be located anywhere that is most convenient. The magnetic switch in turn establishes the connection between the battery and the starting motor. Another feature of the system is a small switch which is operated by the starting handle and which automatically switches on the ignition current when the motor is



MAGNETIC MOTOR SWITCH WITH DASH BUTTON AND AUTOMATIC IGNITION SWITCH

cranked by hand in case of emergency.

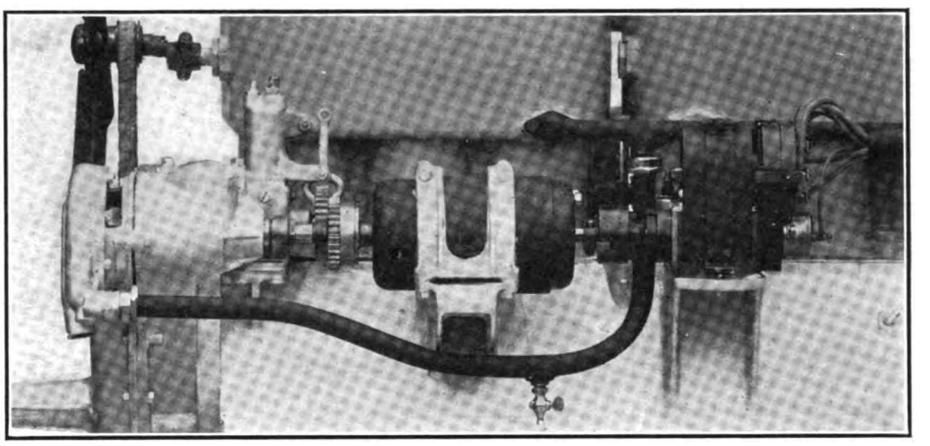
Since the Bosch lighting system was first announced and described and illustrated in detail in Motor World bearing date of February 5, 1914, no material changes have been made in its construction. Two new generators have been added, however, making three in all, as well as a new switch and control box. Motors are different sizes and are calculated to care for all of the various size installations for which there may be a demand.

Two of them are substantially the same, one being slightly larger than the other; these two are designed for attachment through gearing from any exposed shaft or in some other convenient way. The third generator, which is the original is of slightly different construction and is designed to be applicable on the same kind of a base as ordinarily is occupied by a Bosch magneto. In other words, the shaft is standard magneto shaft high, thus simplifying the application of the machine.

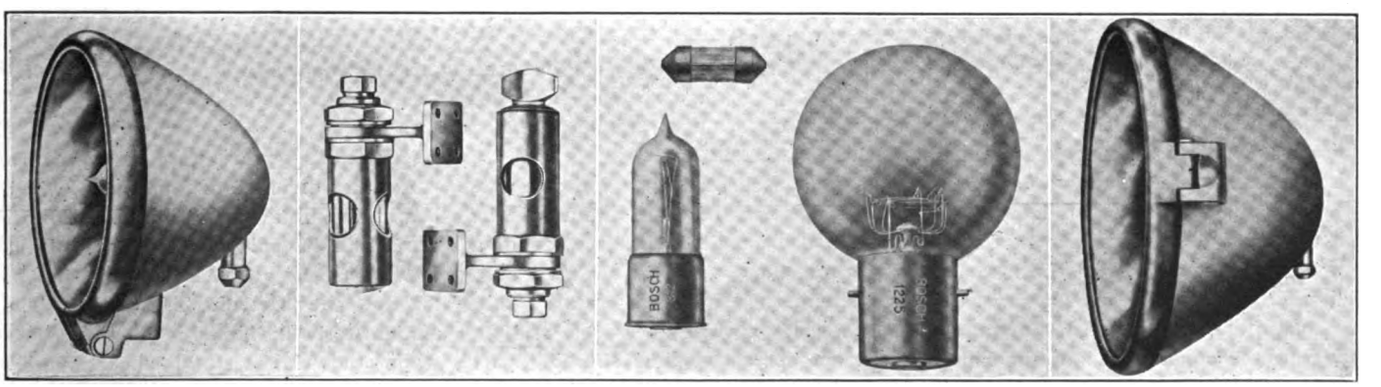
Specifically, all three of these dynamos are of the simple shunt wound type and the excitation of the field magnets is governed by a specially designed and patented carbon particle-electro-magnetic device, which is shown by one of the accompanying illustrations. This controller is mounted in a container which is attached either to the front of the dash, forming a unit with the switch box, or to the back of the dash as a separate unit, according to the requirements of the installation.

Nominally, the voltage of the Bosch dynamos is 12 at 350 r. p. m., the maximum output, which cannot possibly be exceeded, being 7.5 amperes and 13.5 volts at 550 r. p. m. A battery well discharged will receive the maximum current, though a battery fully charged will receive a very little current. The dynamo provides, in fact, the much-sought-after "taper charge" which is considered so essential by battery engineers.

Not only does the combination switchboard and control box which houses the regulator serve as a junction box, but it also contains the meter. This is a double instrument, indicating both volts and



APPLICATION OF BOSCH LIGHTING GENERATOR TO MARMON MOTOR



SIDE, TAIL, DASH AND HEAD LAMPS OF BOSCH SYSTEM AND THEIR STANDARD BULBS

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amperes and reading right and left for charge and discharge. Of the two switches provided, one serves to connect the lamps in the various combinations and the other connects either the dynamo direct to the lamps, the battery to the lamps, or both together, in which case the battery is charged.

If for any reason it should be necessary to disconnect the dynamo and it should be connected wrongly, it automatically becomes inoperative, thus protecting the battery. In the second place, all wires are numbered and are so fastened that they cannot work loose. The wires themselves are encased in metallic coverings and the coverings serve as the return circuit.

The lamps that form part of the system are different from anything else of their kind, and, like all the other parts, are a product of the Bosch factories. One of their important features is that bulbs have been standardized and when inserted automatically are placed in proper focus; in fact, it is impossible to insert them in such a way that they are out of focus. In the case of the side lamps, the reflectors are attached to, and are a part of, the front glass retainers, construction which discourages unwelcome and unnecessary attention. The lamps have special hinges, located at the bottom, which are drilled to receive the bracket; a special screw, which cannot be removed though it may be loosened, is provided to fix the front of the lamp in position.

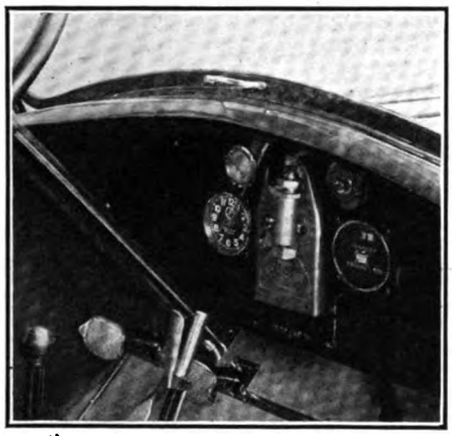
The construction of the head lamps is quite different and an ingenious means has been taken to discourage indiscriminate tinkering with the reflectors. All lamps are provided with a lock, operated by the same key that permits switches on the control box to be operated. The door fastening is a spring-loaded, taper-headed bolt, which consequently tends to hold the door tightly shut. Under the bezel of the lamp there is a tapered surface bedding upon a strip of heavy felt, thus providing a dust- and moisture-proof joint.

The reflectors, which in the side lamps are connected to the front glass holder, are in the head lamps connected to the lamp itself, the bulbs being held in place by means of bayonet locks which automatically provide for the proper focus. It is impossible to put any other than a Bosch bulb into a Bosch lamp. In designing the reflectors an effort—a successful one, be it added—has been made to distribute the rays in such a way that the usual blinding glare is eliminated. Owing to the construction of the lamp filaments, which lie in a plane horizontal to that of the front glass, a true flame effect is produced, and instead of being projected in a thin pencil the light beams are more diffused and spread over a considerable angle.

Even the dash and tail lamps are of special design and carry special bulbs; in both cases the lamp casing unscrews from its base to free the lamp bulb in case of necessity.

The Bosch-Rushmore system, which will be produced in what hereafter will be known as the Rushmore works of the Bosch Magneto Co., is to be continued practically in its original form except for a number of refinements.

The system itself is comparatively well known through its widespread adoption. In this case, the starting motor is mounted alongside the engine, which is driven through the intermediary of gearing cut in the flywheel. The peculiar characteristic of the motor is that the armature is slidably mounted and the gears are drawn into mesh solely by magnetism.



MARMON DASH, SHOWING COMBINATION SWITCHBOARD AND CONTROL BOX

When the current is switched on, the field exerts a powerful pull upon the armature, which slides about one inch, thus meshing the gears. When the engine picks up its own load, the armature automatically slides back to its normal position under the influence of a spring, drawing the gears out of mesh.

Several sizes of starting motors are to fit all the various size engines. Both 6- and 12-volt systems will be produced for the present, at least.

In the Bosch-Rushmore lighting system, regulation of the output of the dynamo is controlled with the aid of a miniature coil or iron wire placed atop the generator. This coil heats slightly as the current value increases, and its resistance increases, thus shunting part of the current through what is known as a "bucking coil," and weakening the field. In this way the output of the machine is kept practically constant regardless of fluctuations in armature speed.

To Standardize Service Agreement.

The standardization of the service agreement is the difficult task which will be taken up by the Motor Truck Club within the next few months. The first step will be taken at the July meeting, which is to be held tonight in the assembly room of the Automobile Club of America, New York City. The questions which will be thrashed out in discussion are as follows:

1. What constitutes "Service"—
   (a) What should the manufacturer expect of dealer and owner?
   (b) What should the dealer expect of manufacturer and purchaser?
   (c) What should the purchaser expect of manufacturer and dealer?
2. The necessity for and the advantages of service
   (a) Under manufacturer's guarantee.
   (b) The effect it has or may have upon sales.
   (c) The advertising value it may produce.

More Room For Holihan Mfg. Co.

The Holihan Mfg. Co., now located at 1506-12 West Fort street, Detroit, Mich., has removed to a factory having three times the floor space and located at 21st and West Jefferson avenues. The new plant is specially adapted for sheet metal working, the size of the main floor being 80 x 120 feet. New machinery and a large additional enameling oven will be installed so that the company will be one of the best equipped for turning out gasolene tanks, hoods, fenders, stampings, radiators and sheet metal parts.

Parts Specialtist Adds Atlas Business.

The Auto Parts & Repair Co., Springfield, Mass., has purchased the repair end of the Atlas Motor Car Co.'s business and is prepared to furnish parts for all of the existing models of Atlas two-cycle motors. The Auto Parts & Rapair Co. specializes in repair parts for Elmore cars, as well.

Michigan Buggy Creditors Get 5% More.

Another dividend of 5 per cent., which brings the total up to date to 20 per cent., will be paid the creditors of the Michigan Buggy Co., Kalamazoo, by the trustee, the Detroit Trust Co. The amount to be disbursed is about $150,000, while the claims total approximately $3,000,000.

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PACKARD CAR DOES WELL IN NON-MOTOR-STOP RUN

Touring Car of 1913 Vintage Travels from Chicago to New York in 41 Hours 37 Minutes—Run Was Officially Observed.

A non-motor stop run from Chicago to New York was completed Tuesday, July 7, when E. C. Patterson, Chicago, drove his 1913 Packard 48 into New York at 10:25 P. M. The elapsed time was 41 hours 37 minutes and the odometer showed 1,025 miles. The route was by way of South Bend, Toledo, Cleveland, Buffalo, Syracuse, Albany and Poughkeepsie. Patterson and his assistant, Ed Imms, Detroit, drove the car in 4-hour relays. J. E. Williams and William Gollan were appointed official observers by the Chicago Automobile Club; the crew stuck to the car throughout the run, taking their meals and what sleep they could get on board.

The motor was sealed before leaving Chicago and arrived in New York with the seals unbroken, no adjustments of any kind having been made. One momentary stoppage of the motor occurred at Bryan, O. In filling the gasolene tank it was necessary to let off the air pressure, which, of course, prevented feeding to the carburetter. To keep the motor running while filling up, a small tank was rigged on the dashboard. The accidental stoppage occurred because the auxiliary tank was shut off a trifle too soon, so that the carburetter ran dry.

Patterson, who is vice-president and general manager of P. F. Collier & Son, publishers, was a leading spirit in a proposed non-motor stop run from Chicago to Boston by the Chicago Automobile Club. When the project fell through he decided to make the run to New York in his own car, which he had used for a year. Pilots familiar with local roads were taken on at various points along the route. Pennsylvania tires were used; the only tire troubles were caused by two pinched tubes due to using casings without flaps.

Decree Favors Weed Company.

In the case of the Parsons Non-Skid Co. and the Weed Chain Tire Grip Co. against the Leather Tire Goods Co., Inc., Judge Hand has signed an order taking the bill of complaint pro confesso. The motion was made by Frederick S. Duncan, attorney for the complainants, so that the bill be taken pro confesso and as no answer had been filed by the defendant; more than 20 days having elapsed since the serving of the subpoena, the court ordered that the bill be taken in this way "and that after the expiration of 30 days after the entry of this order a final decree may be entered therein." A preliminary injunction on default was issued by Judge Mayor in favor of the Parsons Non-Skid Co. and the Weed Chain Tire Grip Co. in May in the United States District Court for the Southern District of New York. The plaintiffs charge infringements on the Parsons patent No. 723,999, covering the well-known Weed chain tire grip construction.

Double Ford Plant in Five Years.

The plant of the Ford Motor Co., Detroit, Mich., is to be practically doubled, but the increase will not be made all at once. According to plans which have been laid down, the size of the plant will be greatly increased during a period of five years, and it is expected that in 1919 there will be a total floor space of 3,732,585 square feet, and that the buildings will cover 85 acres. At present the buildings cover about 45 acres, and 20,000 men are employed; this number will be doubled. The buildings which it is proposed to put up are five in number and will be exactly similar to the two buildings which were started last year, and which are now almost complete. These buildings measure 900 feet by 60 feet and are 6 stories in height. The new buildings will be of reinforced concrete throughout. A new power plant is now being erected, and when complete it will house what is probably the largest gas engine in the world.

Blossom to Investigate Foreign Chains.

C. W. Blossom, of the Grant-Lees Gear Co., Cleveland, O., sailed on the S.S. Coronia from Boston on Tuesday, July 14, to investigate European manufacture of silent chains. He will spend considerable time at the Coventry silent chain factory, in Coventry, England.

Dodges Incorporate for $5,000,000.

The Dodge Brothers, who are to bring out a car which will be announced within the next two months, have incorporated with a capital stock of $5,000,000. John F. Dodge is president and treasurer, Horace E. Dodge vice-president and general manager, and Alfred L. McMeans secretary and office manager. The two brothers hold equal amount of stock, giving them full control, while McMeans holds the balance.

TRANSCONTINENTAL SAXON REACHES FRISCO ON TIME

Runs 3,389 Miles In 30 Days and Averages 30 Miles To a Gallon—Arrives in Good Mechanical Condition.

The Saxon car which dipped its rear wheels in the Atlantic and started a transcontinental tour from New York to San Francisco on June 4, ran its front wheels into the edge of the Pacific on July 4, on schedule time. The distance, 3,389 miles, was covered with an average gasolene consumption of 30 miles to a gallon; a quart of oil lasted 150 miles. The car finished in excellent mechanical condition. The Saxon is the first car that has covered the route of the Lincoln Highway on a continuous trip and also is the first machine of its type to make the transcontinental journey.

About 25 miles out of San Francisco an escort party met the Saxon and conveyed it into the city. M. A. Croker, who, with Fred Wilkins, drove the car all the way, made a bee-line for the beach and drove the front wheels into the Pacific and emptied into the ocean a bottle of water scooped up from the Atlantic.

The last 290 miles, from Reno to San Francisco, were covered in two days. Throughout the run the car stuck to its prearranged schedule. The longest single day's run was 186 miles, between Kimball, Neb., and Denver, Co.; runs of 170 miles in a day were quite frequently made. The car showed up well on the long grades of the Alleghenies between New York and Canton, O., making the ascents without adding water.

Before undertaking this trip the same car made a run of 135 miles a day for 30 consecutive days in Detroit. The 4,050 miles covered on that occasion, coupled with distance of 3,389 miles across the Lincoln Highway, brought the total for 60 days of travel up to 7,349 miles, or equivalent of two years' service in the hands of the average owner.

Peerless Passes a Dividend.

In order to conserve its resources in view of the fact that it will shortly place on the market a popular priced car, which will be an addition to its present line of higher priced vehicles, the Peerless Motor Car Co., Cleveland, O., has deferred the payment on its 7 per cent. cumulative preferred stock.

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Dealer's Legal Status

Contracts for Work, Orders for Repairs and Material should Always Be Put in Writing—Minors Cannot Be Held Responsible for Bills.

By Geo. F. Kaiser

Unfortunately, the time when business is best is also the time when a man is most likely to become involved with those with whom he has business dealings. If these trade quarrels would only arise when business is slow, the dealer would have ample opportunity to know some measure to protect himself. When business is good and he is rushed, he is very apt to become careless.

Whenever at all possible, all contracts, orders for work, and orders for materials should be set out in writing. The value of a written order will be realized by a dealer at some time when he has occasion to sue a man on a bill and the man, much to his surprise, goes on the witness stand and testifies that the work was never ordered by him. It is then a case of one man's word against another's, a situation which is always, to say the least, unsatisfactory. If a man cannot be pinned down to sign his name to a written order, the dealer should at least try to have some one present when the order is given by word of mouth, so that this other person may back up the dealer's testimony if the matter ever comes into court.

Make Sure That Chauffeurs Have Proper Authority to Give Orders.

Wherever possible the dealer should try to get in direct touch with the car owners and deal as little through chauffeurs as possible, as it always is an open question whether or not a chauffeur had authority to do certain things on behalf of his employer, and, when a person is dealing with an agent, he does so at his peril and the courts have said that a person so dealing must ascertain just what authority another's agent possesses.

It must be borne in mind that a chauffeur is not presumed to have authority to contract for general repairs and only in cases of sudden or unexpected breakdown or "road trouble" may the chauffeur bind his employer in ordering such repairs of temporary character, or such necessary supplies as will enable him to continue his journey. But a chauffeur has no implied authority to make contracts for repairs of a general or permanent nature at any time.

Driver Has Right to Garage Car In Case of Accidental Injury.

There is a case in New York on this point, being the case of Gage vs. Callanan, 109 N. Y. Sup. 844. In this case, while a car was in charge of the chauffeur it broke down on the road and the chauffeur went to a garage and had temporary repairs made. While leaving the shop the chauffeur told the dealer that, if the car broke down again, he desired that another car be sent to tow it in. The car did break down and the chauffeur sent a messenger to the garage keeper, asking him to come and get the car, which he did.

Before making the repairs, the dealer wrote several letters to the car owner, but received no reply, and he thereupon went ahead with the repairs. The court held that the "chauffeur had no implied or apparent authority to order permanent repairs, or any repairs other than such as when necessary to enable him to proceed upon his journey, and that the dealer had recognized that fact because he had written to the car owner, and that when he received no reply he went ahead with the repairs at his own risk and cost."

The court said, however, that the chauffeur had the right to place the broken-down car in a garage for safe keeping and accordingly the garage keeper was given judgment for storage of the car, althought his claim for the amount of the bill for repairs was denied.

Contracts Made With Persons Under 17 Years Old Generally Are Voidable.

Another class that dealers should be careful in dealing with are minors. In most of the states a contract made with a minor is voidable, as for example, suppose a young man 17 years old came into a garage with a car, which he stated was his own, and ordered it to be thoroughly overhauled. If the dealer went ahead and overhauled the car and presented his bill it would be optional with the young man whether he should pay or not.

If the dealer sued him and the fact that he was a minor was set up, the charges for the overhauling could not be recovered, and unless he ratified the contract after he become of age, the dealer would be out of pocket the amount of the bill.

Always Have Parent or Guardian Guarantee the Payment of the Bill

The best way to dispense with this possibility is to deal directly with the parent, that is, have him order the work with the understanding that it is to be charged to him, or, if he is not willing to do this, have him guarantee the payment of the bill, but in this latter event the dealer must remember that a guarantee of this kind is practically worthless unless the whole matter is clearly set forth in writing and signed by both parties to the agreement.

In most of the states there is a so-called Statute of Frauds, which provides, among other things, that every agreement, promise or undertaking, is void unless it or some note or memorandum thereof be in writing and be submitted to the party to be charged therewith, or by his lawful agent, if such agreement, promise or undertaking is a special promise to answer for the default or miscarriage of another person. The promise to pay for the overhauling of the owner's car may be seen to be the kind of promise, therefore, which would have to be in writing.

Verbal Contracts for More Than $50 Sometimes May Be Broken by Either.

Another provision in the Statute of Frauds is that a contract for the sale of any goods, chattels or things in action for the price of $50 or more is void unless the buyer accepts part of the goods or pays part of the purchase money.

If then a motor car dealer should make a verbal contract to sell a used car for more than $50 and the buyer did not accept the car, nor pay part of the purchase price, the contract would accordingly be void.

And, unless both parties were satisfied with their agreement, either one of them might refuse to go on with it at his pleasure.

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Reilly Gets Out a New Form Letter Series

Or, Rather, Tommy Trumbull Does It, and Reilly Says They're Good—What Do You Think of Them?

By Ray W. Sherman

"Hey, Nellie! Have you——"

"Don't you hey me! I'm no horse!"

"Oh, very well," responded Tommy Trumbull to this rebuff by Reilly's typewriter chauffeur, "what you say goes around here, I notice. But have we got a series of form follow-up letters?"

"Have we? Yes, we have. Why?"

"I don't mean that series we used last fall and last winter. I mean a series for the new stuff, the 'fifteen' cars. I——"

"Not that I know of. Why?"

"Say!" exclaimed Tommy. "Can't you say anything without ending up with a why?"

"Yes. Why?" laughed Nellie.

"Didn't Mr. Reilly ever write a new series? How often are we supposed to have a new series? How——"

"And can't you ask one question at a time and——"

"The same to you and many of them," retorted Tommy. "But——"

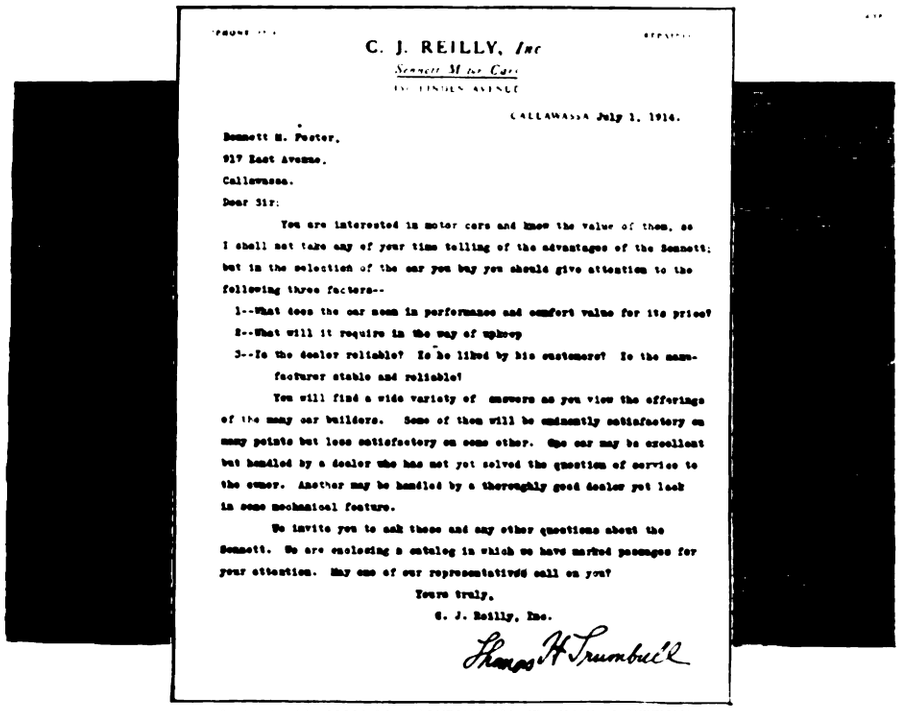
"No, we haven't a new series," said Nellie in a less belligerent manner. "Mr. Reilly spoke of getting up a new series the other——"

"What now? What now?"

Neither had seen Reilly come in and both turned in a startled manner as the familiar voice asked the question.

"Tommy wants a new series of follow-up letters," was Nellie's tattle-tale remark.

"I—I—No, I—I was just wondering if we had a new series for our new stuff?" he finally managed to explain.



C. J. REILLY, *Inc*
Sensors M for Cars
[illegible] FINDEN AVENUE

CALLAWASSA July 1, 1914.

Bennett M. Foster,
917 East Avenue,
Callawassa.

Dear Sir:

You are interested in motor cars and know the value of them, so I shall not take any of your time telling of the advantages of the Bennett; but in the selection of the car you buy you should give attention to the following three factors--

1--What does the car seem in performance and comfort value for its price?
2--What will it require in the way of upkeep
3--Is the dealer reliable? Is he liked by his customers? Is the manufacturer stable and reliable?

You will find a wide variety of answers as you view the offerings of the many car builders. Some of them will be eminently satisfactory on many points but less satisfactory on some other. One car may be excellent but handled by a dealer who has not yet solved the question of service to the owner. Another may be handled by a thoroughly good dealer yet lack in some mechanical feature.

We invite you to ask these and any other questions about the Bennett. We are enclosing a catalog in which we have marked passages for your attention. May one of our representatives call on you?

Yours truly,
C. J. Reilly, Inc.
Thomas H Trumbull

NO. 1—TOMMY'S "INTRODUCTORY" LETTER

"Go ahead," advised Reilly. "It won't cost anything. Try it."

Tommy went thoughtfully over to his desk and for four hours was silent, which was more or less unusual. By lunch time his waste basket was full of scribbled and crumpled papers and by mid-afternoon this receptacle had long since ceased to be of any value as a container for waste paper. Now and then Tommy stopped to put a new point on a pencil and finally he got a handful of pencils and sharpened them all so he wouldn't have so many interruptions.

"Phew! Gee!" He leaned back and mopped his brow. It was three o'clock. "There! Good or rotten, they're done!"

"Let's see 'em," requested Reilly, and Tommy laid upon the desk of the boss his handiwork.

Tommy "Sells" Reilly the Letters.

One by one Reilly read them through, with now and then a wrinkling of the brow or a nod of approval. As he laid the last one down he said, "They're not so bad, Tommy. I've seen a lot worse."

"Honest?" Tommy smiled.

"Really, they're pretty good," replied Reilly. "I might have gone at it a little differently, but—what's your theory, anyway? Some of them sound a lot alike."

Before he began Tommy feigned to be doubtful of his ability, but now that he had undertaken and completed the task he was ready to fight for the attitude he had taken and the work he had done. He hitched his chair up to the desk, put the letters in a little pile in front of him, and began to "sell" Reilly on the series.

He opened with a "Well" and continued: "To start, we've got to have an introductory letter (No. 1), something that acts as an entering wedge and introduces us to the man. This series I intend to be used on men who must be followed up by letter rather than by personal calls entirely. I had Bennett M. Foster in mind, but they'll fit almost any one.

"This first letter has got to be such that it will make a good impression on the man. It also must grip his attention and he must read it all the way through.

"We ought to get one up right now," replied Reilly. "I've been going to do it but haven't got around to it. Why don't you do it?"

"Me!" exclaimed Tommy.

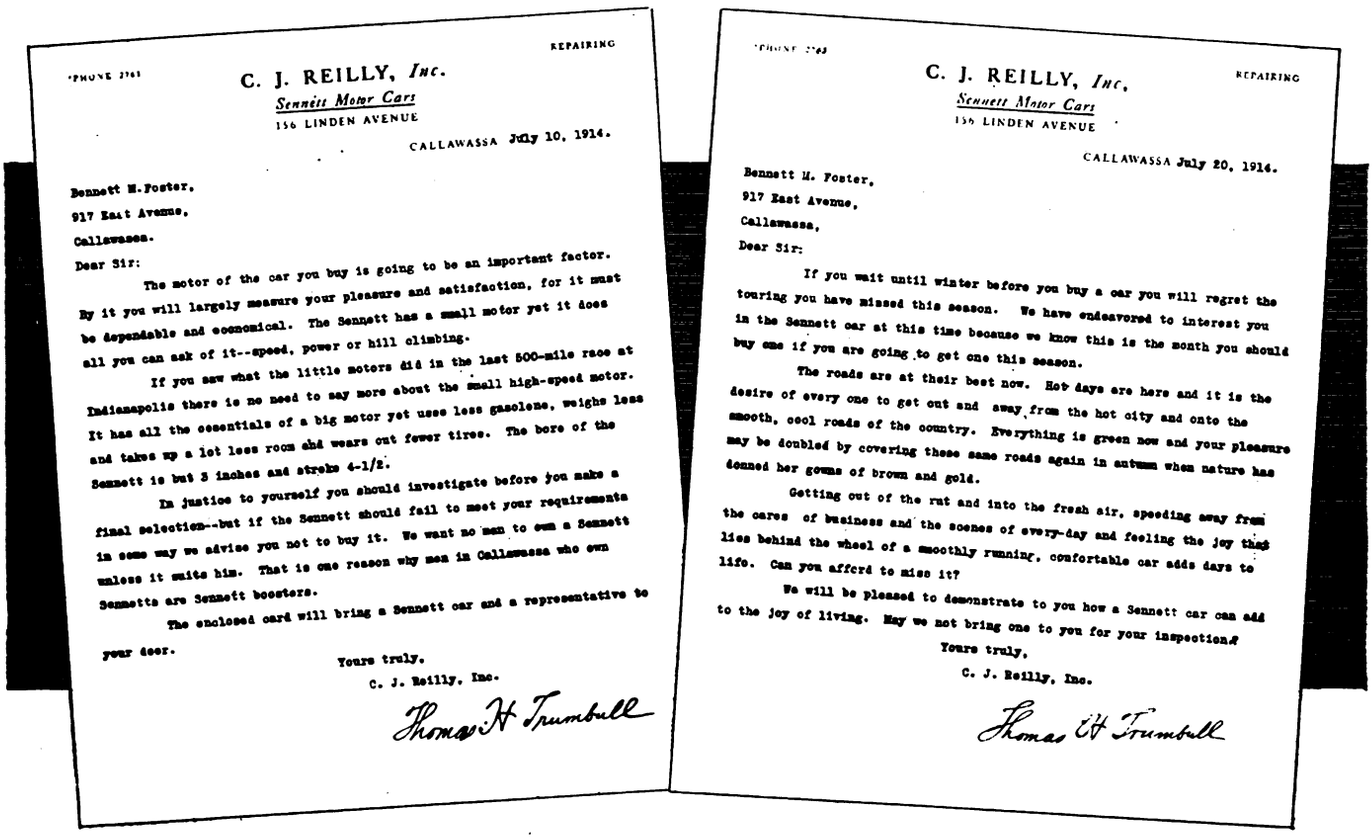
"Certainly! Why not?" demanded Reilly.

"Why—I——"

"If you can sell cars you ought to be able to write letters," returned Reilly. "Try it, anyway. But why are you so anxious?"

"I've got Bennett M. Foster's name and I don't think I can do best work by personal follow-up. I think if I had a good follow-up series it might have an effect on him. I could use it a lot, too. Those other series we had worked out fine."

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'PHONE 2763 REPAIRING

C. J. REILLY, *Inc.*

Sennett Motor Cars

156 LINDEN AVENUE

CALLAWASSA July 10, 1914.

Bennett M.Foster,
917 East Avenue,
Callawassa.

Dear Sir:

The motor of the car you buy is going to be an important factor. By it you will largely measure your pleasure and satisfaction, for it must be dependable and economical. The Sennett has a small motor yet it does all you can ask of it--speed, power or hill climbing.

If you saw what the little motors did in the last 500-mile race at Indianapolis there is no need to say more about the small high-speed motor. It has all the essentials of a big motor yet uses less gasolene, weighs less and takes up a lot less room and wears out fewer tires. The bore of the Sennett is but 3 inches and stroke 4-1/2.

In justice to yourself you should investigate before you make a final selection--but if the Sennett should fail to meet your requirements in some way we advise you not to buy it. We want no man to own a Sennett unless it suits him. That is one reason why men in Callawassa who own Sennetts are Sennett boosters.

The enclosed card will bring a Sennett car and a representative to your door.

Yours truly,
C. J. Reilly, Inc.
Thomas H Trumbull

NO. 2—TRUMBULL'S "MOTOR" LETTER

'PHONE 2763 REPAIRING

C. J. REILLY, *Inc.*

Sennett Motor Cars

156 LINDEN AVENUE

CALLAWASSA July 20, 1914.

Bennett M. Foster,
917 East Avenue,
Callawassa,

Dear Sir:

If you wait until winter before you buy a car you will regret the touring you have missed this season. We have endeavored to interest you in the Sennett car at this time because we know this is the month you should buy one if you are going to get one this season.

The roads are at their best now. Hot days are here and it is the desire of every one to get out and away from the hot city and onto the smooth, cool roads of the country. Everything is green now and your pleasure may be doubled by covering these same roads again in autumn when nature has donned her gowns of brown and gold.

Getting out of the rut and into the fresh air, speeding away from the cares of business and the scenes of every-day and feeling the joy that lies behind the wheel of a smoothly running, comfortable car adds days to life. Can you afford to miss it?

We will be pleased to demonstrate to you how a Sennett car can add to the joy of living. May we not bring one to you for your inspection?

Yours truly,
C. J. Reilly, Inc.
Thomas H Trumbull

NO. 3—LETTER HINGES ON "TOURING"

If he doesn't, the value of the rest of the series is lessened. In this we assume that he is thinking of buying a car—as he is—and lay the problem before him with the suggestion that he investigate carefully before he eventually makes his purchase.

Acts as Prospect's Adviser.

"I think this is better than starting off with a big yell about ourselves and our car. We appear as advisers to him and merely suggest that as he investigates the other cars he give us our share of consideration. This, I believe, should make a better impression than if we rushed in at the start with too much boosting for ourselves. If he digests that letter these that follow ought to help our cause."

"Yes, it sounds pretty good," commented Reilly. "It has a nice tone; it sounds as if we were an honest, reliable company."

"And I don't think we ought to send him a return card right off the reel. Perhaps we won't succeed in getting him really interested until the middle of the series. In that case the card would be wasted, and if the car appeared a second time the psychological effect would be that he had seen it before and would attach less importance to it. So I would send a catalog under separate cover. I would mark several pages to center his attention and not especially because they are the most important passages."

"That's all right. Marking a catalog is a mighty good stunt. It makes the catalog more effective and at the same time shows the man what the car looks like and enables him to get all the information he wants if he cares to look the book over," said Reilly.

"Now this one," continued Tommy, as he picked up No. 2 of his series. "This is a 'motor letter.' We might have sent any one of a number of different ones as a second letter, but the motor is about as big a point as we have and I didn't want to get more than one point into any one letter. I think too many points divert the man's attention and make the letter less effective."

"That's true."

Value of Short Letters.

"And I don't think any of the letters should be too long. If the prospect sees that the letter is long he is going to be discouraged before he ever starts to read. We should always try to make our opening sentence grip the prospect's attention and then not keep his attention too long. Hit him while he's listening!" Tommy made a punch-punch gesture with his fist. "If he is a mechanical man he is going to ge interested in the motor and even if he isn't this letter is not so technical that he can't get the idea. It at least ought to cause him to give the car a thought if he is at all interested."

"Yes." Most of Reilly's comments were short; some of them noncommittal.

Get "Fair Dealing" In.

"And at the end I have tried to inject an element of fair dealing by telling the man he ought not to buy a Sennett car unless it suits him. I have also enclosed a return card which will enable him to reply. If he even says 'No' on it, we know we have got his attention.

"This third letter"—Tommy picked No. 3 from the pile—"is a 'touring letter,' an appeal to the man's love of touring—if he has any. If he hasn't it is an attempt to arouse such a desire. It is a word picture letter. If the man has any emotion in his system this ought to cause him to stop the rush and whirl of business for a couple of seconds and give a thought to the pleasure that lies in touring. I've tried to bring the cool, green country right to his office.

"This might require a line or two of alternation were it being sent to a man who already has a car and thinks of buying a new one, but the appeal in it I think is good——"

"It is a bit woodsy."

"And it is intended to impress upon the prospect the fact that by waiting he is only cutting short his own pleasure.

"Now—for the fourth one I have writ-

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ten two, either of which might be used. Bennett M. Foster is a rather conservative man, a banker, and I think touring and comfort will appeal to him more than anything else. Therefore, I have written a 'comfort letter.' The alternative is a 'speed letter.'

"This comfort letter is specific. It talks about something the man knows all about. He knows all about the Overlook Hotel and how people run down there for dinner, and so forth, and when we mention that trip we don't have to say any more—he knows all about it in a flash. It is more effective, to my way of thinking, than talking about comfort in a general way. When we say the car rides easy over some particular bad spot in the road it confines the issue to a single point and is therefore more forceful than if we said the car rode easy over all bad spots."

"Yes."

Give Something to Compare With.

"Then we compare it to his easy chair at home. That's something else he knows all about. We could talk comfort till the cows come home, but when we say 'easy chair' he knows right off the bat what we're talking about. Then we invite him to ride. He may accept—and he may not."

"He may not," repeated Reilly. "Probably not—if every letter got an answer there wouldn't be any use for salesmen."

Tommy laughed.

Speed May Be the Magnet.

"And now this 'speed letter,'" continued Tommy. "That's aimed at a special class. Were Foster a young blood who didn't give a darn about comfort or anything else, but just wanted to go like the devil all the time, I would send him this letter at this point. The other letters certainly wouldn't have any bad effect on him and this letter at this point in the series ought to be a strong point. I know a lot of fellows like that. Their sole idea is speed, speed, speed!

"I rung in that reference to the 500-mile race because the chances are that will make more of a hit with the speed boy than with any other. He probably knows all about the Speedway race and knows that what we say is backed up by information he already has. I don't say no car can pass the Sennett, because it isn't true. Some of them can. But no car which is built for touring purposes can show it much dust. Then we invite him to take that run out toward Midtown. Every speed maniac in town knows that Midtown road and the mere mention of it carries weight."

"What's that postscript business?" Reilly smiled.

"Oh, that?" Tommy laughed. "I just stuck that in as a sort of happy-go-lucky, slangy, sporty appeal to the speed boy. One of his chief objects in life is dodging country cops, and a fine is a joke to him—unless he has to pay it. I think that if I were a speed boy that little postscript that we pay all the fines on the demonstration would sort of make a hit with me. I like it. Don't you?"

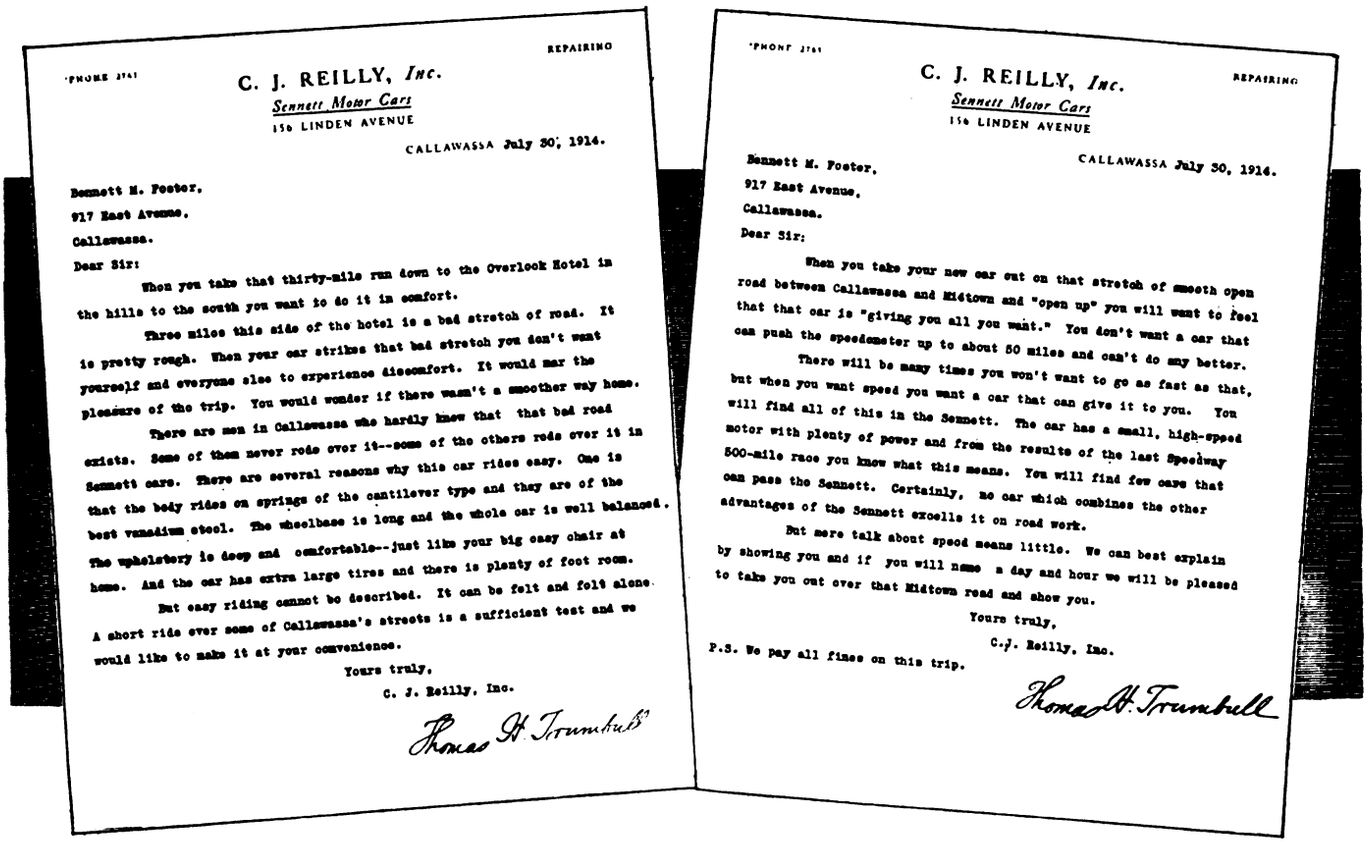
Reilly smiled and looked thoughtful. "I don't know," he replied. "It isn't a bad idea. Leave it in anyway; maybe it will make good."

Play Up Dealer's Service.

"Then, here's number five, our 'dealer letter.' I think we ought to play ourselves up in this series, and I don't think we ought to do it too early. We're selling Reilly service, it is true, but I think our best approach to the prospect is through the car. In previous letters we have told him about the car and what it can do for him, and now I think is about the time to say something about what goes with a car; the time to tell him that when he buys a car he should buy something besides mere metal and wood and paint."

'Yes."

"So I've rung in this dealer letter. We tell the man there are several things he should consider and they are points on which we stand shoulder high with anyone else in town. That, in fact, is one of our strong points. With this letter I



'PHONE 3741

C. J. REILLY, *Inc.*
Sennett Motor Cars
156 LINDEN AVENUE

REPAIRING

CALLAWASSA July 30, 1914.

Bennett M. Foster,
917 East Avenue,
Callawassa.

Dear Sir:

When you take that thirty-mile run down to the Overlook Hotel in the hills to the south you want to do it in comfort.

Three miles this side of the hotel is a bad stretch of road. It is pretty rough. When your car strikes that bad stretch you don't want yourself and everyone else to experience discomfort. It would mar the pleasure of the trip. You would wonder if there wasn't a smoother way home.

There are men in Callawassa who hardly know that that bad road exists. Some of them never rode over it—some of the others rode over it in Sennett cars. There are several reasons why this car rides easy. One is that the body rides on springs of the cantilever type and they are of the best vanadium steel. The wheelbase is long and the whole car is well balanced. The upholstery is deep and comfortable—just like your big easy chair at home. And the car has extra large tires and there is plenty of foot room.

But easy riding cannot be described. It can be felt and felt alone. A short ride over some of Callawassa's streets is a sufficient test and we would like to make it at your convenience.

Yours truly,
C. J. Reilly, Inc.

Thomas H. Trumbull

NO. 4—THE "COMFORT" LETTER

'PHONE 3741

C. J. REILLY, *Inc.*
Sennett Motor Cars
156 LINDEN AVENUE

REPAIRING

CALLAWASSA July 30, 1914.

Bennett M. Foster,
917 East Avenue,
Callawassa.

Dear Sir:

When you take your new car out on that stretch of smooth open road between Callawassa and Midtown and "open up" you will want to feel that that car is "giving you all you want." You don't want a car that can push the speedometer up to about 50 miles and can't do any better.

There will be many times you won't want to go as fast as that, but when you want speed you want a car that can give it to you. You will find all of this in the Sennett. The car has a small, high-speed motor with plenty of power and from the results of the last Speedway 500-mile race you know what this means. You will find few cars that can pass the Sennett. Certainly, no car which combines the other advantages of the Sennett excells it on road work.

But mere talk about speed means little. We can best explain by showing you and if you will name a day and hour we will be pleased to take you out over that Midtown road and show you.

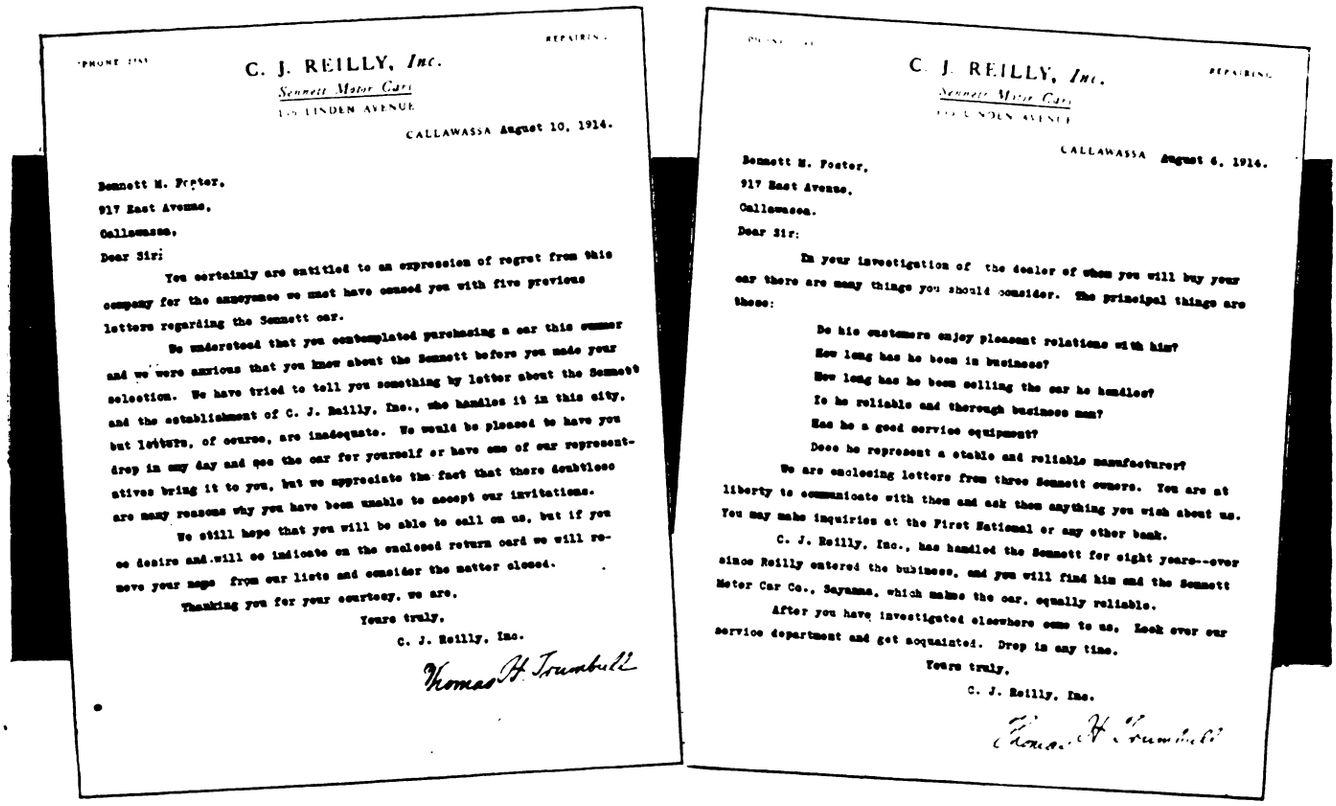
Yours truly,
C. J. Reilly, Inc.

P.S. We pay all fines on this trip.

Thomas H. Trumbull

NO. 4—ALTERNATIVE "SPEED" LETTER

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C. J. REILLY, *Inc.*
Bennett Motor Cars
[illegible] LINDEN AVENUE
REPAIRING

CALLAWASSA August 10, 1914.

Bennett M. Foster,
917 East Avenue,
Callawassa,

Dear Sir:

You certainly are entitled to an expression of regret from this company for the annoyance we must have caused you with five previous letters regarding the Bennett car.

We understood that you contemplated purchasing a car this summer and we were anxious that you know about the Bennett before you made your selection. We have tried to tell you something by letter about the Bennett and the establishment of C. J. Reilly, Inc., who handles it in this city, but letters, of course, are inadequate. We would be pleased to have you drop in any day and see the car for yourself or have one of our representatives bring it to you, but we appreciate the fact that there doubtless are many reasons why you have been unable to accept our invitations.

We still hope that you will be able to call on us, but if you do desire and will so indicate on the enclosed return card we will remove your name from our lists and consider the matter closed.

Thanking you for your courtesy, we are,

Yours truly,

C. J. Reilly, Inc.

Thomas H. Trumbull

NO. 6—THE "REGRET" LETTER

C. J. REILLY, *Inc.*
Bennett Motor Cars
[illegible] LINDEN AVENUE
REPAIRING

CALLAWASSA August 6, 1914.

Bennett M. Foster,
917 East Avenue,
Callawassa.

Dear Sir:

In your investigation of the dealer of whom you will buy your car there are many things you should consider. The principal things are these:

Do his customers enjoy pleasant relations with him?
How long has he been in business?
How long has he been selling the car he handles?
Is he reliable and thorough business man?
Has he a good service equipment?
Does he represent a stable and reliable manufacturer?

We are enclosing letters from three Bennett owners. You are at liberty to communicate with them and ask them anything you wish about us. You may make inquiries at the First National or any other bank.

C. J. Reilly, Inc., has handled the Bennett for eight years—ever since Reilly entered the business, and you will find him and the Bennett Motor Car Co., Sayanna, which makes the car, equally reliable.

After you have investigated elsewhere come to us. Look over our service department and get acquainted. Drop in any time.

Yours truly,

C. J. Reilly, Inc.

Thos. H. Trumbull

NO. 5—THE "DEALER" LETTER

would enclose about three testimonial letters, from three men whom I think the prospect knows. Were he a doctor I would send letters from doctors, were he a lawyer I would send letters from lawyers, and so on.

Invites Dealer Investigation.

"We invite him to look us up financially to see whether we are likely to be in business next winter when the man wants something done to the car. We tell him how long we've been in business and make brief mention of the company which makes the car. We invite him to look us up to his heart's content and then when he gets all through drop in and give us a personal inspection. I rather like that letter."

"It isn't bad," smiled Reilly.

"And now here's number six, the last of the series. I don't think there is much use following a man up forever with letters; it's a waste of paper and stamps and the longer you hammer at him without getting results the harder he is going to be to land. So I decided it would be best to chase him about six or eight weeks and then quit gracefully before we had to acknowledge ourselves hopelessly beaten.

"This letter is intended to raise us in his estimation and make him feel rather cheap because he hasn't been business man enough to answer our letters. We tell him we are sorry we have annoyed him and explain that our intentions in sending him these letters were good—or at least that we thought they were. We try to help him explain why he hasn't been in to see us and then we say we hope he yet may come. If he is annoyed and doesn't want to come we offer him a card with which he can get his name off our mailing list in short order. This letter is intended to convey to him the impression that while we are anxious to sell a man who wants a car we don't want to continue to chase a man who is annoyed by our attentions.

Permits Going Back Again.

"That is a good letter, Tommy," asserted Reilly. "I must admit I like that myself. There's nothing to prevent our keeping an eye on the man and going back after him again some day if the occasion ever presents itself, and if we do endeavor to renew negotiations at a future date this letter ought to have left the man with an impression of us and our methods that will make our way easier and not harder."

"None of these letters, probably, will ever sell a car," continued Reilly. "The best they can do is get the man interested; get him to write; get him to drop in, or in some way indicate to us that he is not disinterested in our proposition. If our letters have tilled the field and sown a little seed it is up to us to finish the job by personal work.

Form Letter Series Necessary.

"But every dealer should have such a series of form letters. By careful study for a few hours he can turn out a logical series that will fit as a general rule, although the injection of a little personal matter may help out often. But if he depends upon dictation for every letter he sends out he isn't going to be able to do such a good job. If he must dictate a letter it won't do him any harm to have such a series in front of him."

"You will notice," remarked Tommy, "that I have dated them about ten days apart. I think that is better than exactly a week apart. If they were a week apart they all might happen in at the same point in the routine of a man's work and that point might not be the best from our standpoint. But ten days apart they are all received at a different time of the week.

"The last two are but four days apart. We have given him time to reply to the next to the last letter if he is going to. so we follow him right up with our final letter.

"I guess we'll call that our series, Tommy," concluded Reilly. "They're as good as I could do—if not better—and we'll try them out. Start on Bennett M. Foster with them."

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Prospects Plenty; Getting Them No Problem

Trenton Dealer Picks 'Em Up in Theater, and Street—Sells Four Makes of Cars But Has No Salesmen.

When one of John L. Brock's intimate friends in Trenton, N. J., sees Brock twist his head around and look over the audience between the acts at a theater the friend remarks, "Somebody's going to buy a car." Very often the friend is right.

The theater audience is one of the many fields from which Brock picks his prospects, but it is not the only one; just as many men never thought of hunting for prospects in a theater crowd, so Brock has numerous other ways of adding names to his eligible list of owners. Summed up briefly, his method is, "They're everywhere. Pick 'em up."

When he walks along the street one eye is so trained that it automatically flits from face to face looking for men who can afford cars but who haven't yet bought them. When such a man is found he becomes a Brock prospect and if he isn't careful the first thing he knows he is enjoying life in a car and wondering why he didn't buy one sooner.

Wide Range of Car Prices.

Neither does it make much difference who or what the man is. If he is a man of limited means but still able to own a car, Brock investigates and very likely decides that the man had better buy a Ford. The Fords cost $500 for a runabout and $550 for a touring car, which is the bottom of the price range unless the man is content to take a used car at a little less money. But the price range is a feature of Brock's business, and few prospects can complain that they don't buy because the prices don't suit them.

It was to meet this very objection that Brock took on a list of good agencies He has the Ford, Buick, Chalmers and Winton, and in case a man has a hankering for an electric he offers the Detroit electric. If the prospect needs a commercial car Brock has the Autocar and Garford to offer. A table which appears at the beginning of the story shows the price range possible with the assortment of pleasure cars in Brock's Garage, which is the style under which he does business. It is located on Canal street, just off State, the latter a main thoroughfare.

Should the prospect be able to spend a little more than the price of a Ford Brock suggests a Buick, and then runs on up the list with the Chalmers and the Winton, and he figures that he is able to hit the buying ability of any man in Trenton.

Machines to Suit All Tastes.

In the dealer field there are firm advocates of "price range" dealership and the "single line" agency; each believes one is the best. The "single line" advocates say they can do better because they have but one make of car to handle and therefore can concentrate on it; above all, they are against handling lines which compete in price. This, too, is contrary to Brock's principles.

"Supposing you want to buy a car and can pay more than a Ford costs," reasons Brock. "Why shouldn't I get your business by being able to give you the car you want? And the same way with the whole price range. If I can't supply every man's needs in the way of size and price I am going to lose certain sales. But why not meet the size and price and get that much more business?"

In the course of a year Brock disposes of about 250 Fords, 25 Buicks, 20 Chalmers and 4 or 5 Wintons; as the price grows higher the sales become fewer because of the limited higher-price classes of buyers.

Sells Cars Without Salesroom.

In a big city like New York or Chicago Brock's method of picking out prospects at a theater or on the street would not work so well, for its success lies in the fact that Brock knows a large percentage of the 100,000 people in Trenton, especially the business and professional men. He gained this knowledge through years spent in the stone finishing and building business and began to relinquish his grasp on that line of trade only a few years ago when concrete began to crowd building stone for supremacy as a building material.

At that time the motor car looked like a promising article to tie up to, so Brock opened a garage and secured agencies. He has a two-story building of about 100 feet front and 200 feet deep; it garages 60 cars and contains a repair and machine shop and a well-stocked supply store.

BROCK'S VARIED PRICE OFFERING

Ford runabout	$500
Ford touring	550
Buick runabout	950
Buick touring	1,050
Buick runabout	1,235
Buick touring	1,335
Chalmers touring	1,800
Buick "6" touring	1,985
Chalmers coupelette	2,050
Chalmers runabout and touring	2,175
Chalmers 6-passenger touring	2,275
Winton runabout and small touring	3,250
Winton 6- and 7-passenger touring	3,500
Chalmers limousine	3,600
Winton standard limousine and coupe	4,350
Winton sedan and berline	4,750

One of the peculiarities of the establishment is that, despite the list of cars handled, Brock has no salesroom whatever. One side of the street front is the garage entrance and the other side is the supply store. Not even has a section of the garage been walled off and beautified for salesroom purposes. Brock was asked if he didn't feel the need of a salesroom and how he managed to get along without one.

Believes in Road Demonstrations.

He said sometimes he felt the need of it and sometimes he didn't; anyway, he never built one, and he has been in business several years and is a shrewd business man. It is true that when a prospect is being sold on some particular model and make of car the presence of too many other different styles and sizes of cars might tend to confuse him and not hasten the sale, and this may give some advantage to the absence of a salesroom where all the cars would have to be shown in full view of the prospect.

Demonstrations on the road are a principal part of Brock's car display. Also, the fact that Fords are a principal part of his business, constituting from 80 to 85 per cent of the number of sales, lessens the necessity for a salesroom in that Ford merchandising differs from the selling of any other car. If a man wants a Ford he wants a Ford; he has seen hundreds of them on the road and doesn't need to be told much about the car. He knows they will run and what they cost. Fords are often sold "over the counter"; the prospect walks in, pays his money and takes a car. The procedure may not be quite so brief, but is close to it.

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In follow-up work and prospect filing the system employed is simple and uncomplicated. Brock's prospect filing cards are without question the simplest in existence. They are a rectangular piece of white cardboard without a rule or word on them; a typist writes the name, address and other data and the card is filed alphabetically. Mail pieces are sent out whenever the factories send them to the dealer. Advertising is used every Sunday in the city's one Sunday paper. One salesman devotes all his time to selling and is assisted by Brock and his son, both of whom devote a share of their time to the other departments of the business.

Brock, too, has found it necessary to give service a limit.

BROCK'S LIMIT OF SERVICE.

All adjustments free	30 days
Labor on defective parts free	90 days
Defective parts free	1 year

Prepared for Electric Trade.

Electrics have not yet become an important factor in the business. Brock handles them, he states, in order that his offering of cars may be complete. He sells two or three a year and does not expect great results from this field as yet; but when the electric has attained a greater measure of popularity he will be established as an electric dealer. He is prepared to make a good bid for future business, even though other electric dealers should enter the field, because he has charging facilities at the present time.

Not content with the mere selling of trucks, he has placed two Autocars out at hired livery service; these carry the Brock name in small lettering, but conspicuously, and are both an advertisement and a source of profit. He is getting paid for demonstrating to the whole city the work these cars are capable of doing.

Equipped for Wide Range of Work.

The proprietor prides himself on the fact that he serves the public to the best of his ability; his garage never closes and there are few repairs that the shop cannot make. He has a well-equipped machine-shop, a painting department and a tire repair and vulcanizing department. Seventeen mechanics are employed, and in two years at least there have been but two slack weeks; these were caused by a blizzard.

The shop, which is in charge of a man named Woods, can make bushings and axle shafts and rebuild a car from start to finish. The machine equipment includes 2 drill presses, a grindstone, an 18-inch lathe, an emery and polishing wheel, a band saw, a power hack-saw, a shaper, and an adequate equipment for forge work.

Record System for Men's Time.

The paint-shop, which is partitioned from the rest of the shop, does its work by contract with the car owner; Woods states that because of the fact that the men are obliged to go from job to job as the drying and other conditions require, it is difficult to segregate the time applied on any one car. Therefore, the foreman estimates each job and the work is done at that price. Painting can be estimated where an estimatae on mechanical overhauling would be uncertain.

The workmen's time system, which was devised by Woods, differs from the usual system; cards 10 inches long and 4½ inches wide, with holes for hanging on a peg, are used, one for each car or job in the shop. The back contains a record of the man's time and the front an order for the work to be done.

In the foreman's office in the wall is a peg for each workman; supposing Gray starts work on Brown's car; he and his helper work on that car until painting or some work they cannot do is necessary. The card is still left hanging on Gray's hook and Gray and his helper are placed on Green's car, Green's order card then being hung on Gray's peg in front of the card for the Brown car. When the Brown car comes out of the paint shop and more mechanical work is necessary, Gray and his helper resume work on it where they left off, the Brown card then being hung in front of the Green card. When they have finished with Brown's car they go back to Green's car. Painting and work the mechanics did not do is written in on the time sheet on the back of the card in the interval where the mechanics left off.

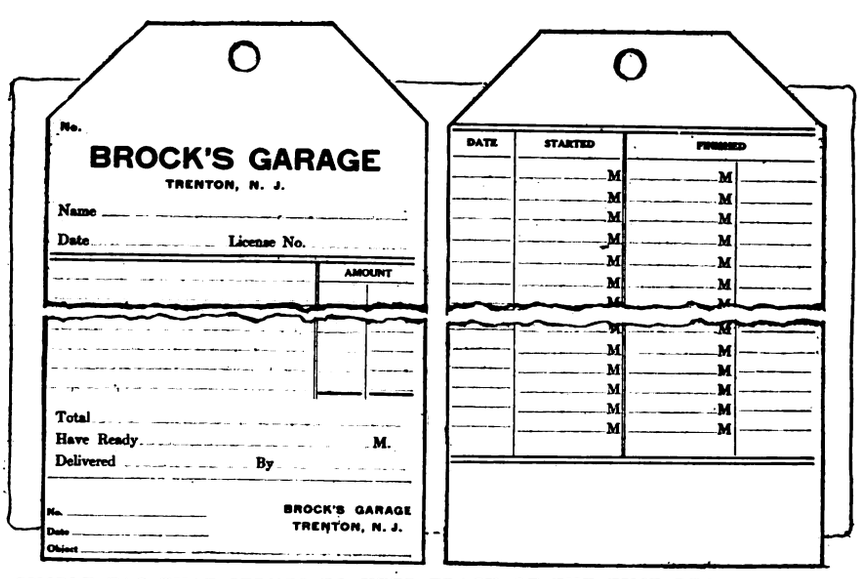
his weekly time record.

The problem of keeping track of tools is met by a system also devised by Woods. Drills and small tools are in racks and each larger tool has a certain place in the tool room. Hanging on hooks are brass checks, about the size of a quarter, 10 checks to the man. Each man has his number and a key-sheet on the wall gives the names and numbers. Near each tool is a little hook, and when a man wants a tool one of his checks is hung at the space of the tool he took out. This makes the man responsible for the tool; if another man wishes to borrow the tool the man to whom it is credited is obliged to request the foreman to make a change of checks in order to absolve the first borrower from responsibility.

Stock That Runs Into Money.

The relative volume of sales is indicated in the stocks of parts; these are. Ford, $3,500; Autocar, $1,500; Chalmers, $1,000; Buick, $1,000. The tire stock runs from $6,000 to $8,000 and supplies and accessories from $10,000 to $12,000. Gasolene is sold at 16 cents and 10,000 gallons is the average monthly sales. Summer Sundays often account for 700 gallons. "Gulf" gasolene is used.

Storage rates run from $12 to $20, according to the size of the car. The average 5-passenger touring car brings $16 a month. About 60 cars are stored regularly.



SIMPLE TAG THAT SERVES TO KEEP TRACK OF THE TIME REQUIRED FOR EVERY JOB

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Broadway Makes Noise About Its 1915 Cars

When the New Cars Come the People Know It.

No Sign Too Small When Season Is Opening



WHEN the 1915 cars began to arrive in New York City the salesrooms along Broadway took on renewed life with a jump. Big signs flared forth and the dealers could not make too much noise about the arrival of their demonstrators.

The Buick branch covered its front with big canvas signs. No cars were on hand but the signs said the cars were coming.

C. T. Silver put up two Willys-Knight signs that could be seen for blocks; the higher one is visible from Times Square. It says little—but enough. It tells the whole story well.

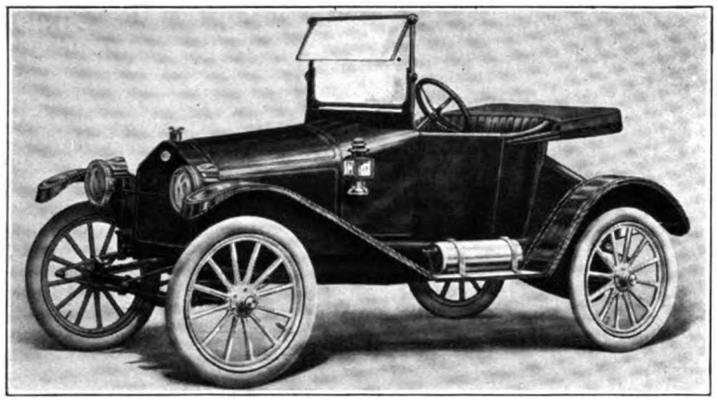
The Cutting-Larson Co. was free with paint and canvas when the new Oldsmobile struck town and proceeded to grab publicity while the time was ripe. The marked-up card shown below the Olds store front is an enlargement of the card shown on the windows. It looked like a rush job and was strong because of it.

How did you announce your new cars? Send us a picture! Write us a letter! If you have a good idea, pass it along!

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Wheelbase Longer in Latest Metz

Increased From 90 to 96 Inches and Brand New Streamline Body Mounted—Carburetter Now a Product of Metz Factory—Other Details Practically Unchanged.



METZ ROADSTER FOR 1915 WITH NEW BODY AND LONGER WHEELBASE

With its wheelbase lengthened six inches, and with a brand-new body having the tapering lines that mark the modern car, the 1915 Metz roadster has made its appearance. There has been no change in the price, which remains at $495, notwithstanding the longer frame and the improved new body that mark the new model.

Excepting the body, the lengthening of the wheelbase and the slight changes necessitated by the increased length, the machine is exactly the same Metz that the Metz Co., Waltham, Mass., turned out for the 1914 season. The leading characteristic is that of the friction speed changing mechanism, from which drive is taken through jackshaft and side chains to the rear wheels on a stationary rear axle.

The four-cylinder motor has block-cast L-head cylinders 3¾ x 4, the S. A. E. rating being 22.5 horsepower. Valve stems and springs are enclosed in the approved manner. Lubrication is by constant level splash, with pump circulation of the oil, and cooling is by gravity circulated water, the capacity of the system being 3½ gallons. A special carburetter that is a new product of the factory at Waltham furnishes the motor with gas, and ignition is effected by a Bosch high-tension magneto, as in the preceding model.

Both crankshaft and camshaft, which are steel forgings finished by grinding, run in white metal bearings. The gasolene tank, holding 10 gallons of fuel, is carried in the cowl and feeds by gravity. The makers state that the quantity carried is sufficient for approximately 300 miles running under ordinary road conditions.

The friction drive is effected through two disks, the driven disk being the one that is shifted in changing speeds. Drive from the disk shaft to the jackshaft is by a single silent chain, and from the jackshaft, which carries the enclosed differential, to the rear wheels by side chains enclosed in tight cases and operon high speed. Reverse is obtained by shifting the driven disk across the center of the driving disk. A worn friction ring is easily replaced at slight expense.

The frame is of pressed steel, of the conventional channel section, and is supported by full elliptic springs all round. Wheels are of wood; 30 inches in diameter, shod with 3-inch Goodrich clincher tires.

The machine is thoroughly equipped in the matter of brakes, there being a set of internal expanding brakes on the rear wheels and an external contracting brake on the jackshaft, besides which the friction disks may be used for braking purposes. All wheels run on ball bearings. The tread is the usual standard, 56 inches.

Left steer is employed; the steering gear is of the rack and pinion type, adjustable for wear. The speed lever is centrally located. A pedal corresponding to the clutch pedal separates the friction disks and a pedal operates the service brake. The usual throttle control lever is conveniently mounted on the steering wheel.

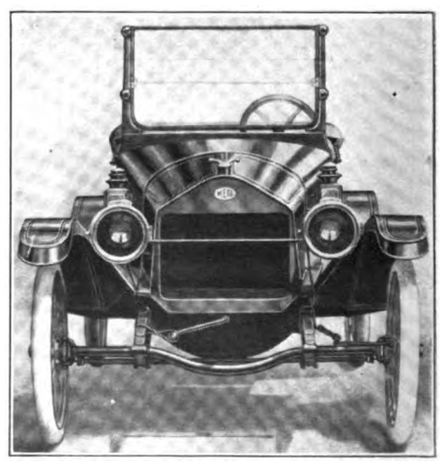
The body is finished in dark blue with cream wheels; comfort has been increased by making the cushions softer and thicker, and the addition to the wheelbase will also help not a little in this direction. The doors are 20 inches wide. Wide fenders afford a complete protection from flying mud and dust from the wheels. In the rear there is a large storage compartment with a tight cover, where a considerable quantity of dunnage can be stowed.

The lighting system includes two headlights with Prest-O-Lite tank, two oil dash lamps and an oil tail light. Other equipment includes top with envelope and side curtains, two-part adjustable windshield of the built-in type, horn, jack, set of tools and tire repair outfit.

SPECIFICATIONS OF 1915 METZ ROADSTER

Price, roadster	$495
Color	Dark blue
Make of motor	Metz
Number of cylinders	Four
Shape	L-head
How cast	Block
Bore	3¾
Stroke	4
S. A. E. horsepower	22.5
Magneto	Bosch
Carburetter	Metz
Wheelbase	96
Tread	56
Tires	30 x 3
Wheels	Wood
Steering	Left
Control	Center
Type of rear axle	Stationary

Equipment: Top with envelope and side curtains, two-part windshield, gas headlights with Prest-O-Lite tank, oil dash and tail lamps, tools, jack, pump and tire repair outfit.



FRONT VIEW, SHOWING TAPERING FORM

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Tire Makers Advise on Pressures and Loads

Rear Tires Should Carry Less Proportionate Weight Than Front Tires, Experts State—Structural Differences in Tires Cause Makers' Figures to Differ.

Proper tire inflation is more than important. It is necessary, if the tires are to give the best service of which they are capable. Insufficient inflation and over inflation are alike harmful—and expensive. Why?

Under inflation permits too much movement of the tire, and this sets up internal friction, which causes heating. This causes the rubber to deteriorate chemically, to say nothing of the mechanical effects of friction. A wave of rubber is formed just ahead of the point of contact of the tire with the road, and this tends to absorb power, giving the motor more work to do. Also it tends to separate the rubber and fabric composing the tire and to form weak spots and encourage blow-outs. Pinched tubes often result from insufficient inflation.

One the other hand, over inflation places on the tires an abnormal stress and encourages trouble. If there is a weak spot its weakness is increased and it may let go altogether—blow out. The chief feature of the pneumatic is made null and void and the car rides hard, as if on solid tires. The occupants are uncomfortably jolted, the whole machine is subjected to harmful vibration and the tires themselves are made to suffer, apart from other things, from the many sharp shocks. The abnormal outward pressure tends to exaggerate a slight cut and to make a big cut bigger.

The pressure in a tire is not altogether an arbitrary thing. It must bear a definite relation to the weight it is to carry. Roughly, it is fairly safe to assume that if a tire is inflated to such a pressure that it will not flatten or bulge when under normal load, it is sufficiently inflated. But inflation should stop short at this point, for further pressure means excessive pressure. Reduce the load on this tire, however, and it is equivalent to increasing the pressure, for if a tire rides easily and is properly inflated with a load of, say, 800 pounds, the same tire with the same inflation will be too hard and will cause jolting and vibration under a load of 700 pounds or less.

A common and useful rough-and-ready reckoning is that front tires should be inflated to from 15 to 18 pounds per square inch for each inch of section, and rear tires from 15 to 20 pounds for each inch. For example, 4-inch tires on front wheels would be pumped to from 60 to 72 pounds, and 4-inch tires on rear wheels to from 60 to 80 pounds. The reason the rule cannot be made more definite is that weights of loads vary; a car weighing 1,800 pounds may have 4-inch tires, and a car weighing 2,800 pounds may have the same tires. Clearly, however, tires pumped to the proper pressure for the lighter car would be soft and squashy for the heavier machine.

The weight of the car is of course the governing factor in determining the proper size of tire; speed and road conditions are also factors, but of less importance. If a tire is too small for the car it must be pumped up to an excessive pressure to keep its shape, and it will be overworked in every way and its life shortened. Going to the other extreme and putting on tires that are much too big is merely a waste of money, for tires that are excessively large will be affected in about the same way as tires of the proper size under inflated, the reason being that in order to secure easy riding the big tires will have to be so soft that they will weave and wobble.

The tables given herewith show the tire sizes and inflation pressures recommended by most of the prominent tire manufacturers for various loads—or, rather, the loads and pressures recommended for various sizes of tires. Differences in the figures are due chiefly to differences in tire construction methods.

Those who are interested in these tables will doubtless be quick to observe that in many notable instances the weights recommended for rear tires are substantially less than the weights recommended for front tires of the same section and inflated to the same pressure. A tire is intended to do just so much work, regardless of what that work may be. The front tires have to carry the front of the car, while the rear tires have to carry the rear of the car and also have to transmit the thrust of the motor.

It is unnecessary to dwell upon the fact that driving the car adds considerably to the work performed by the tires and that it is only logical to make some compensation. If the tires are of the same size front and rear it would seem that the rear tires should carry less weight. If, however, the weights are the same front and rear, it would appear reasonable to make the rear tires larger.

Size	Pressure Front	Pressure Rear	Permissible Load Front	Permissible Load Rear
Ajax-Grieb Rubber Co., Trenton, N. J.				
Sec. 3 inch	60	60	....	....
Sec. 3½ "	70	70	....	....
Sec. 4 "	80	80	....	....
Sec. 4½ "	90	90	....	....
Sec. 5 "	100	100	....	....
Sec. 5½ "	110	110	....	....
Fisk Rubber Co., Chicopee Falls, Mass.				
28-34 x 3	60	60	300	300
28-34 x 3	65	65	400	400
30-32 x 3½	60	60	400	400
30-32 x 3½	65	65	500	500
30-32 x 3½	70	70	600	600
34-36 x 3½	65	65	500	500
34-36 x 3½	70	70	600	600
34-36 x 3½	75	75	700	700
32-36 x 4	65	65	600	600
32-36 x 4	70	70	700	700
32-36 x 4	75	75	800	800
32-36 x 4	80	80	900	900
38-42 x 4	65	65	700	700
38-42 x 4	70	70	800	800
38-42 x 4	75	75	900	900
38-42 x 4	80	80	1000	1000
34-36 x 4½	70	70	900	900
34-36 x 4½	75	75	1000	1000
34-36 x 4½	80	80	1200	1200
34-36 x 4½	85	85	1400	1400
36 x 5	75	75	1200	1200
36 x 5	80	80	1400	1400
36 x 5	85	85	1600	1600
38-40 x 5	75	75	1400	1400
38-40 x 5	80	80	1600	1600
38-40 x 5	85	85	1800	1800
38-40 x 5½	80	80	1800	1800
38-40 x 5½	90	90	2000	2000
40 x 6	85	85	2000	2000
40 x 6	95	95	2200	2200
Kelly-Springfield Tire Co., Akron, O.				
28 to 36 x 3	60	60	350	350
30 x 3½	70	70	450	450
32 x 3½	70	70	550	550
34 & 36 x 3½	70	70	600	600
30 x 4	80	80	550	550
31 x 4	80	80	600	600
32 x 4	80	80	650	650
33 x 4	80	80	680	680
34 x 4	80	80	700	700
35 x 4	80	80	725	725
36 x 4	80	80	750	750
34 x 4½	90	90	900	900
35 x 4½	90	90	900	900
36 x 4½	90	90	950	950
35 x 5	100	100	1000	1000
36 x 5	100	100	1000	1000
37 x 5	100	110	1100	1100
B. F. Goodrich Co., Akron, O.				
28 x 3	55	55	425	350
30 x 3	55	55	450	375
32 x 3	55	55	450	375
34 x 3	55	55	475	400
28 x 3½	60	60	500	425
29 x 3½	60	60	525	500
30 x 3½	60	60	550	450
31 x 3½	60	60	575	475
32 x 3½	60	60	600	500
33 x 3½	60	60	625	525
34 x 3½	60	60	650	550
36 x 3½	60	60	700	600
30 x 4	70	70	750	600
31 x 4	70	70	775	625
32 x 4	70	70	800	650
33 x 4	70	70	850	675
34 x 4	70	70	875	700
35 x 4	70	70	875	725
36 x 4	70	70	900	750
37 x 4	70	70	925	775
38 x 4	70	70	950	800

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Size	Pressure Front	Pressure Rear	Permissible Load Front	Permissible Load Rear
40 x 4	70	70	1000	850
42 x 4	70	70	1050	900
32 x 4½	80	80	950	800
33 x 4½	80	80	1025	850
34 x 4½	80	80	1125	900
35 x 4½	80	80	1175	950
36 x 4½	80	80	1225	1000
37 x 4½	80	80	1250	1050
38 x 4½	80	80	1300	1100
40 x 4½	80	80	1375	1150
42 x 4½	80	80	1450	1200
43 x 4½	80	80	1525	1250
34 x 5	90	90	1200	1000
35 x 5	90	90	1250	1050
36 x 5	90	90	1300	1100
37 x 5	90	90	1350	1150
39 x 5	90	90	1450	1250
41 x 5	90	90	1550	1350
43 x 5	90	90	1650	1450
36 x 5½	100	100	1575	1300
37 x 5½	100	100	1575	1350
38 x 5½	100	100	1600	1400
37 x 6	110	110	1700	1550
39 x 6	110	110	1750	1600
41 x 6	110	110	1800	1650
Firestone Tire & Rubber Co., Akron, O.				
26 x 3	50	50	425	325
28 x 3	50	50	450	350
30 x 3	50	50	475	375
32 x 3	50	50	475	375
34 x 3	50	50	500	400
29 x 3½	60	60	550	450
30 x 3½	60	60	575	475
31 x 3½	60	60	600	500
32 x 3½	60	60	625	525
33 x 3½	60	60	650	550
34 x 3½	60	60	675	575
36 x 3½	60	60	700	625
30 x 4	70	70	700	550
31 x 4	70	70	725	575
32 x 4	70	70	750	600
33 x 4	70	70	775	625
34 x 4	70	70	800	650
35 x 4	70	70	825	675
36 x 4	70	70	850	700
37 x 4	70	70	875	725
38 x 4	70	70	900	750
40 x 4	70	70	950	800
42 x 4	70	70	1000	850
32 x 4½	80	80	1000	800
33 x 4½	80	80	1050	850
34 x 4½	80	80	1100	900
35 x 4½	80	80	1150	950
36 x 4½	80	80	1200	1000
37 x 4½	80	80	1250	1050
38 x 4½	80	80	1300	1100
40 x 4½	80	80	1400	1200
42 x 4½	80	80	1500	1300
33 x 5	90	90	1200	950
34 x 5	90	90	1250	1000
35 x 5	90	90	1300	1050
36 x 5	90	90	1350	1100
37 x 5	90	90	1400	1150
38 x 5	90	90	1450	1200
39 x 5	90	90	1500	1250
41 x 5	90	90	1600	1350
43 x 5	90	90	1700	1450
36 x 5½	95	95	1550	1300
37 x 5½	95	95	1550	1300
38 x 5½	95	95	1600	1350
34 x 6	100	100	1550	1400
37 x 6	100	100	1700	1550
39 x 6	100	100	1750	1600
41 x 6	100	100	1800	1650
Braender Rubber & Tire Co., Rutherford, N. J.				
30 x 3	60	60	450	375
32 x 3	60	60	450	375
30 x 3½	70	70	550	450
32 x 3½	70	70	600	500
34 x 3½	70	70	650	550
30 x 4	80	80	750	625
32 x 4	80	80	800	650
33 x 4	80	80	750	650
34 x 4	80	80	875	700
35 x 4	80	80	885	735
36 x 4	80	80	900	750
34 x 4½	90	90	1125	900
35 x 4½	90	90	1175	935
36 x 4½	90	90	1225	975
37 x 4½	90	90	1260	1010
34 x 5	90	90	1200	1000
35 x 5	100	100	1250	1000
36 x 5	100	100	1300	1050
37 x 5	100	100	1350	1100
37 x 5½	100	100	1400	1150
Racine Rubber Co., Racine, Wis.				
28 x 2½				
28 x 3	60	60	275	225
30 x 3	60	60	425	350
32 x 3	60	60	450	375
28 x 3½	70	70	500	425
30 x 3½	70	70	550	450
31 x 3½	70	70	575	475
32 x 3½	70	70	600	500
33 x 3½	70	70	625	525
34 x 3½	70	70	650	550
36 x 3½	70	70	700	600
30 x 4	80	80	750	625
31 x 4	80	80	775	635
32 x 4	80	80	800	650
33 x 4	80	80	850	675
34 x 4	80	80	875	700
35 x 4	80	80	885	735
36 x 4	80	80	900	750
40 x 4	80	80	1000	850
42 x 4	80	80	1050	900
32 x 4½	90	90	950	750
34 x 4½	90	90	1125	900
35 x 4½	90	90	1175	935
36 x 4½	90	90	1225	975
37 x 4½	90	90	1260	1010
34 x 5	90	90	1200	950
35 x 5	100	100	1250	1000
36 x 5	100	100	1300	1050
37 x 5	100	100	1350	1100
39 x 5	100	100	1450	1200
43 x 5	100	100	1550	1400
34 x 5½	110	110	1250	1000
35 x 5½	110	110	1300	1050
36 x 5½	110	110	1350	1100
37 x 5½	110	110	1400	1150
38 x 5½	110	110	1450	1200
37 x 6	120	120	1400	1150
39 x 6	120	120	1500	1250
Overman Tire Co., New York, N. Y.				
30 x 3	60	60	450	375
32 x 3	60	60	450	375
30 x 3½	70	70	550	450
31 x 3½	70	70	575	475
32 x 3½	70	70	600	500
34 x 3½	70	70	650	550
36 x 3½	70	70	700	600
31 x 4	80	80	750	625
32 x 4	80	80	800	650
33 x 4	80	80	850	675
34 x 4	80	80	875	700
35 x 4	80	80	875	725

Size	Pressure Front	Pressure Rear	Permissible Load Front	Permissible Load Rear
40 x 4	80	80	1000	850
42 x 4	80	80	1050	900
32 x 4½	90	90	950	750
34 x 4½	90	90	1125	900
35 x 4½	90	90	1175	935
36 x 4½	90	90	1225	975
37 x 4½	90	90	1260	1010
38 x 4½	90	90	1300	1050
42 x 4½	90	90	1450	1200
34 x 5	100	100	1200	950
35 x 5	100	100	1250	1000
36 x 5	100	100	1300	1050
Racine Auto Tire Co., Racine, Wis.				
28 to 36 x 2½	40	40	225	225
28 to 36 x 3	50	50	350	350
28 x 3½	60	60	400	400
30 x 3½	60	60	450	450
32 x 3½	60	60	550	550
34-36 x 3½	60	60	600	600
30 x 4	75	75	550	550
32 x 4	75	75	650	650
34 x 4	75	75	700	700
36 x 4	75	75	750	750
32 x 4½	85	85	700	700
34 x 4½	85	85	900	900
36 x 4½	85	85	1000	1000
36 x 5	90	90	1250	1250
38 x 5½	90	90	1350	1350
40 x 6	90	90	1500	1500
Pennsylvania Rubber Co., Jeannette, Pa.				
28 x 3	55	55	425	350
30 x 3	55	55	450	375
32 x 3	55	55	450	375
34 x 3	55	55	475	400
36 x 3	55	55	500	425
28 x 3½	60	60	500	400
29 x 3½	60	60	525	425
30 x 3½	60	60	550	450
31 x 3½	60	60	575	475
32 x 3½	60	60	600	500
33 x 3½	60	60	625	525
34 x 3½	60	60	650	550
35 x 3½	60	60	675	575
36 x 3½	60	60	700	600
30 x 4	70	70	750	600
31 x 4	70	70	775	625
32 x 4	70	70	800	650
33 x 4	70	70	850	675
34 x 4	70	70	875	700
35 x 4	70	70	875	725
36 x 4	70	70	900	750
37 x 4	70	70	925	775
38 x 4	70	70	950	800
40 x 4	70	70	1000	850
42 x 4	70	70	1050	900
32 x 4½	80	80	950	800
33 x 4½	80	80	1025	850
34 x 4½	80	80	1125	900
35 x 4½	80	80	1175	950
36 x 4½	80	80	1225	1000
37 x 4½	80	80	1250	1050
38 x 4½	80	80	1300	1100
40 x 4½	80	80	1375	1150
42 x 4½	80	80	1450	1200
43 x 4½	80	80	1500	1250
34 x 5	90	90	1200	1000
35 x 5	90	90	1250	1050
36 x 5	90	90	1300	1100
37 x 5	90	90	1350	1150
39 x 5	90	90	1450	1250
41 x 5	90	90	1550	1350
43 x 5	90	90	1650	1445
36 x 5½	100	100	1575	1300
37 x 5½	100	100	1575	1350
38 x 5½	100	100	1600	1400
40 x 5½	100	100	1650	1500
42 x 5½	100	100	1700	1600
37 x 6	110	110	1700	1550
39 x 6	110	110	1750	1600
41 x 6	110	110	1800	1650
Diamond Rubber Co., Akron, O.				
28 x 3	55	55	425	350
30 x 3	55	55	450	375
32 x 3	55	55	450	375
34 x 3	55	55	475	400
28 x 3½	55	55	500	425
29 x 3½	55	55	525	400
30 x 3½	55	55	550	450
31 x 3½	55	55	575	475
32 x 3½	55	55	600	500
33 x 3½	55	55	625	525
34 x 3½	55	55	650	550
36 x 3½	55	55	700	600
30 x 4	70	70	750	600
31 x 4	70	70	775	625
32 x 4	70	70	800	650
33 x 4	70	70	850	675
34 x 4	70	70	875	700
35 x 4	70	70	875	725
36 x 4	70	70	900	750
37 x 4	70	70	925	775
38 x 4	70	70	950	800
40 x 4	70	70	1000	850
42 x 4	70	70	1050	900
32 x 4½	80	80	950	800
33 x 4½	80	80	1025	850
34 x 4½	80	80	1125	900
35 x 4½	80	80	1175	950
36 x 4½	80	80	1225	1000
37 x 4½	80	80	1250	1050
38 x 4½	80	80	1300	1100
40 x 4½	80	80	1375	1150
42 x 4½	80	80	1450	1200
43 x 4½	80	80	1525	1250

Size	Pressure Front	Pressure Rear	Permissible Load Front	Permissible Load Rear
34 x 5	90	90	1200	1000
35 x 5	90	90	1250	1050
36 x 5	90	90	1300	1100
37 x 5	90	90	1350	1150
39 x 5	90	90	1450	1250
41 x 5	90	90	1550	1350
43 x 5	90	90	1650	1450
36 x 5½	100	100	1575	1300
37 x 5½	100	100	1575	1350
38 x 5½	100	100	1600	1400
37 x 6	110	110	1700	1550
39 x 6	110	110	1750	1600
41 x 6	110	110	1800	1650
Knight Tire & Rubber Co., Canton, O.				
28 x 3	60	60	425	350
30 x 3	60	60	450	375
32 x 3	60	60	450	375
29 x 3½	70	70	525	400
30 x 3½	70	70	550	450
31 x 3½	70	70	575	475
32 x 3½	70	70	600	500
33 x 3½	70	70	625	525
34 x 3½	70	70	650	550
36 x 3½	70	70	700	600
30 x 4	80	80	825	650
31 x 4	80	80	850	675
32 x 4	80	80	875	700
33 x 4	80	80	900	750
34 x 4	80	80	950	775
35 x 4	80	80	950	800
36 x 4	80	80	975	825
37 x 4	80	80	1000	850
40 x 4	80	80	1050	900
32 x 4½	90	90	1000	850
33 x 4½	90	90	1075	900
34 x 4½	90	90	1175	950
35 x 4½	90	90	1225	1000
36 x 4½	90	90	1275	1050
37 x 4½	90	90	1300	1100
38 x 4½	90	90	1350	1150
40 x 4½	90	90	1425	1200
41 x 4½	90	90	1450	1225
42 x 4½	90	90	1500	1250
34 x 5	100	100	1250	1050
35 x 5	100	100	1300	1100
36 x 5	100	100	1350	1150
37 x 5	100	100	1400	1200
39 x 5	100	100	1500	1300
43 x 5	100	100	1700	1500
34 x 5½	110	100	1575	1300
36 x 5½	110	100	1625	1350
37 x 5½	110	110	1625	1400
38 x 5½	110	110	1625	1425
39 x 6	110	110	1775	1625
United States Tire Co., New York.				
28 x 3	60	60	425	350
30 x 3	60	60	450	375
32 x 3	60	60	450	375
28 x 3½	70	70	425	350
28 x 3½	70	70	500	425
29 x 3½	70	70	525	435
30 x 3½	70	70	550	450
31 x 3½	70	70	575	475
32 x 3½	70	70	600	500
33 x 3½	70	70	625	525
34 x 3½	70	70	650	550
36 x 3½	70	70	700	600
30 x 4	80	80	750	625
31 x 4	80	80	775	635
32 x 4	80	80	800	650
33 x 4	80	80	850	675
34 x 4	80	80	875	700
35 x 4	80	80	885	735
36 x 4	80	80	900	750
37 x 4	80	80	925	800
40 x 4	80	80	1000	850
42 x 4	80	80	1050	900
32 x 4½	90	90	950	750
33 x 4½	90	90	1000	800
34 x 4½	90	90	1125	900
35 x 4½	90	90	1175	925
36 x 4½	90	90	1225	975
37 x 4½	90	90	1260	1010
38 x 4½	90	90	1300	1050
40 x 4½	90	90	1350	1100
42 x 4½	90	90	1450	1200
34 x 5	100	100	1200	950
35 x 5	100	100	1250	1000
36 x 5	100	100	1300	1050
37 x 5	100	100	1350	1100
39 x 5	100	100	1450	1200
43 x 5	100	100	1550	1400
34 x 5½	110	110	1250	1000
35 x 5½	110	110	1300	1050
36 x 5½	110	110	1350	1100
37 x 5½	110	110	1400	1150
38 x 5½	110	110	1450	1200
37 x 6	120	120	1400	1150
39 x 6	120	120	1500	1250
Overman Tire Co., New York, N. Y.				
30 x 3	60	60	450	375
32 x 3	60	60	450	375
30 x 3½	70	70	550	450
31 x 3½	70	70	575	475
32 x 3½	70	70	600	500
34 x 3½	70	70	650	550
36 x 3½	70	70	700	600
31 x 4	80	80	750	625
32 x 4	80	80	800	650
33 x 4	80	80	850	675
34 x 4	80	80	875	700
35 x 4	80	80	875	725

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Size	Pressure Front	Pressure Rear	Permissible Load Front	Permissible Load Rear
36 x 4	80	80	900	750
37 x 4	80	80	925	775
38 x 4	80	80	950	800
40 x 4	80	80	1050	900
32 x 4½	90	90	950	750
33 x 4½	90	90	1050	825
34 x 4½	90	90	1125	900
35 x 4½	90	90	1175	925
36 x 4½	90	90	1225	975
37 x 4½	90	90	1250	1000
38 x 4½	90	90	1300	1050
34 x 5	100	100	1200	950
35 x 5	100	100	1250	1000
36 x 5	100	100	1300	1050
37 x 5	100	100	1350	1100
38 x 5	100	100	1400	1150
37 x 5½	110	110	1400	1150
38 x 5½	110	110	1450	1200
880 x 120	90	90	1125	900
895 x 135	110	110	1300	1050
935 x 135	110	110	1100	1350
Mohawk Rubber Co., Akron, O.				
28 x 3	50	50	450	350
30 x 3	50	50	475	375
32 x 3	50	50	475	375
30 x 3½	60	60	575	475
31 x 3½	60	60	600	500
32 x 3½	60	60	625	525
33 x 3½	60	60	650	550
34 x 3½	60	60	675	575
36 x 3½	60	60	700	625
31 x 4	70	70	725	575
32 x 4	70	70	750	600
33 x 4	70	70	775	625
34 x 4	70	70	800	650
35 x 4	70	70	825	675
36 x 4	70	70	850	700
33 x 4½	80	80	1050	850
34 x 4½	80	80	1100	900
35 x 4½	80	80	1150	950
36 x 4½	80	80	1200	1000
37 x 4½	80	80	1250	1050
35 x 5	90	90	1300	1050
36 x 5	90	90	1350	1000
37 x 5	90	90	1400	1150
36 x 5½	95	95	1500	1250
37 x 5½	95	95	1550	1300
38 x 5½	95	95	1600	1350
Goodyear Tire & Rubber Co., Akron, O.				
28 x 3	60	60	425	350
30 x 3	60	60	450	375
32 x 3	60	60	450	375
29 x 3½	70	70	475	400
30 x 3½	70	70	550	450
31 x 3½	70	70	500	425
32 x 3½	70	70	600	500
33 x 3½	70	70	550	450
34 x 3½	70	70	650	550
36 x 3½	70	70	700	600
30 x 4	80	80	750	600
31 x 4	80	80	650	550
32 x 4	80	80	800	650
33 x 4	80	80	700	575
34 x 4	80	80	875	700
35 x 4	80	80	775	625
36 x 4	80	80	900	750
37 x 4	80	80	800	675
32 x 4½	90	90	950	800
33 x 4½	90	90	875	725
34 x 4½	90	90	1125	900
35 x 4½	90	90	1000	800
36 x 4½	90	90	1225	1000
37 x 4½	90	90	1075	875
38 x 4½	90	90	1300	1100
40 x 4½	90	90	1375	1125
41 x 4½	90	90	1200	1000
34 x 5	90	90	1250	1000
35 x 5	90	90	1300	1050
36 x 5	90	90	1350	1100
37 x5	90	90	1400	1150
39 x 5	90	90	1500	1250
36 x 5½	100	100	1575	1300
37 x 5½	100	100	1500	1200
38 x 5½	100	100	1600	1400
34 x 6	100	100	1500	1300
39 x 6	100	100	1750	1600
Empire Rubber & Tire Co., Trenton, N. J.				
28 x 3	55	55	425	350
30 x 3	55	55	450	375
32 x 3	55	55	450	375
34 x 3	55	55	475	400
28 x 3½	60	60	500	425
29 x 3½	60	60	550	450
30 x 3½	60	60	550	450
31 x 3½	60	60	575	475
32 x 3½	60	60	600	500
33 x 3½	60	60	625	525
34 x 3½	60	60	650	550
36 x 3½	60	60	700	600
30 x 4	70	70	750	600
31 x 4	70	70	775	625
32 x 4	70	70	800	650
33 x 4	70	70	850	675
34 x 4	70	70	875	700
35 x 4	70	70	875	725
36 x 4	70	70	900	750
37 x 4	70	70	925	775
38 x 4	70	70	950	800
40 x 4	70	70	1000	850
42 x 4	70	70	1050	900
32 x 4½	80	80	950	800
33 x 4½	80	80	1025	850
34 x 4½	80	80	1125	900
35 x 4½	80	80	1175	950
36 x 4½	80	80	1225	1000
37 x 4½	80	80	1250	1050
38 x 4½	80	80	1300	1100
40 x 4½	80	80	1450	1200
41 x 4½	80	80	1525	1250
34 x 5	90	90	1200	1000
35 x 5	90	90	1250	1050
36 x 5	90	90	1300	1100
37 x 5	90	90	1350	1150
39 x 5	90	90	1450	1250
41 x 5	90	90	1550	1350
43 x 5	90	90	1650	1450
36 x 5½	100	100	1575	1300
37 x 5½	100	100	1575	1350
38 x 5½	100	100	1600	1400
37 x 6	110	110	1700	1550
39 x 6	110	110	1750	1600
41 x 6	110	110	1800	1650
Advance Tire Sales Co., New York, N. Y.				
28 x 3	60	60	425	350
30 x 3	60	60	450	375
30 x 3½	70	70	500	450
32 x 3½	70	70	500	500
34 x 3½	70	70	500	550
30 x 4	80	80	750	600
31 x 4	80	80	775	625
32 x 4	80	80	775	650
33 x 4	80	80	800	675
34 x 4	80	80	800	700
35 x 4	80	80	850	725
36 x 4	80	80	850	750
37 x 4	80	80	900	775
34 x 4½	90	90	1100	900
35 x 4½	90	90	1150	950
36 x 4½	90	90	1200	950
37 x 4½	90	90	1200	1000
34 x 5	100	100	1250	1000
35 x 5	100	100	1250	1050
36 x 5	100	100	1300	1100
37 x 5	100	100	1450	1100
36 x 5½	100	100	1500	1300
37 x 5½	100	100	1500	1350
Swinehart Tire & Rubber Co., Akron, O.				
30 x 2½	55	55	275	225
28 x 3	65	65	425	350
30 x 3	65	65	450	375
30 x 3½	70	70	550	450
32 x 3½	70	70	600	500
34 x 3½	70	70	650	550
36 x 3½	70	70	700	600
30 x 4	70	70	750	625
32 x 4	75	75	800	650
34 x 4	75	75	875	700
36 x 4	75	75	900	750
38 x 4	75	75	950	800
40 x 4	75	75	1000	850
32 x 4½	80	80	950	750
34 x 4½	80	80	1125	900
36 x 4½	80	80	1225	975
38 x 4½	80	80	1300	1050
35 x 5	85	85	1250	1000
37 x 5	85	85	1350	1100
38 x 5½	90	90	1450	1200
Gaulois Tire Corporation, New York, N. Y.				
28 x 3	60	60	450	350
30 x 3	60	60	475	375
30 x 3½	70	70	575	475
32 x 3½	70	70	625	525
34 x 3½	70	70	675	575
36 x 3½	70	70	700	625
30 x 4	80	80	700	650
31 x 4	80	80	725	675
32 x 4	80	80	750	600
34 x 4	80	80	775	625
34 x 4	80	80	800	650
35 x 4	80	80	825	675
36 x 4	80	80	850	700
37 x 4	80	80	875	725
34 x 4½	90	90	1100	900
35 x 4½	90	90	1150	950
36 x 4½	90	90	1200	1000
37 x 4½	90	90	1250	1050
35 x 5	100	100	1300	1050
36 x 5	100	100	1350	1100
37 x 5	100	100	1400	1150
Englebert Tyre Co., New York, N. Y.				
28 x 3	60	60	450	350
30 x 3	60	60	475	375
30 x 3½	70	70	575	475
32 x 3½	70	70	625	525
34 x 3½	70	70	675	575
36 x 3½	70	70	700	625
30 x 4	80	80	700	550
31 x 4	80	80	725	575
32 x 4	80	80	750	600
33 x 4	80	80	775	625
34 x 4	80	80	800	650
35 x 4	80	80	825	675
36 x 4	80	80	850	700
37 x 4	80	80	875	725
34 x 4½	90	90	1100	900
35 x 4½	90	90	1150	950
36 x 4½	90	90	1200	1000
37 x 4½	90	90	1250	1050
35 x 5	100	100	1300	1050
36 x 5	100	100	1350	1100
37 x 5	100	100	1400	1150
Acme Rubber Mfg. Co., Trenton, N. J.				
26 x 2½	50	50	225	200
28 x 2½	50	50	275	225
28 x 2¾	50	50	275	225
28 x 3	60	60	425	350
30 x 3	60	60	450	375
32 x 3	60	60	450	375
28 x 3½	70	70	500	425
30 x 3½	70	70	550	450
31 x 3½	70	70	575	475
32 x 3½	70	70	600	500
34 x 3½	70	70	650	550
36 x 3½	70	70	700	600
30 x 4	80	80	750	625
31 x 4	80	80	750	625
32 x 4	80	80	775	650
33 x 4	80	80	775	625
34 x 4	80	80	800	650
36 x 4	80	80	850	700
37 x 4	80	80	875	725
38 x 4	80	80	900	750
40 x 4	80	80	1000	850
32 x 4½	90	90	950	750
34 x 4½	90	90	1125	900
35 x 4½	90	90	1175	935
36 x 4½	90	90	1225	975
37 x 4½	90	90	1260	1010
38 x 4½	90	90	1300	1050
40 x 4½	90	90	1350	1100
42 x 4½	90	90	1450	1200
34 x 5	90	90	1200	950
35 x 5	90	90	1250	1000
36 x 5	90	90	1300	1050
37 x 5	90	90	1350	1100
38 x 5	90	90	1400	1150
36 x 5½	100	100	1350	1100
37 x 5½	100	100	1400	1150
38 x 5½	100	100	1450	1200
Lee Tire & Rubber Co., Conshohocken, Pa.				
28 x 3	50	50	425	350
30 x 3	50	50	450	375
32 x 3	50	50	450	375
34 x 3	50	50	475	400
30 x 3½	60	60	550	450
31 x 3½	60	60	575	475
32 x 3½	60	60	600	500
34 x 3½	60	60	650	550
36 x 3½	60	60	700	600
30 x 4	70	70	750	625
31 x 4	70	70	775	635
32 x 4	70	70	800	650
33 x 4	70	70	850	675
34 x 4	70	70	875	700
35 x 4	70	70	885	735
36 x 4	70	70	900	750
40 x 4	70	70	1000	850
32 x 4½	80	80	950	750
34 x 4½	80	80	1125	900
35 x 4½	80	80	1175	935
36 x 4½	80	80	1225	975
37 x 4½	80	80	1260	1010
38 x 4½	80	80	1300	1050
40 x 4½	80	80	1350	1100
42 x 4½	80	80	1450	1200
34 x 5	90	90	1200	950
35 x 5	90	90	1250	1000
36 x 5	90	90	1300	1050
37 x 5	90	90	1350	1100
38 x 5	90	90	1400	1150
36 x 5½	100	100	1350	1100
37 x 5½	100	100	1400	1150
38 x 5½	100	100	1450	1200
Federal Rubber Mfg. Co., Milwaukee, Wis.				
28 x 3½	65	70	400	400
30 x 3½	65	70	450	450
32 x 3½	65	70	550	550
34 x 4½	65	70	600	600
36 x 3½	65	70	600	600
30 x 4	70	75	550	550
32 x 4	70	75	650	650
34 x 4	70	75	700	700
36 x 4	70	75	750	750
40 x 4	70	75	850	850
32 x 4½	75	80	700	700
34 x 4½	75	80	900	900
36 x 4½	75	80	1000	1000
38 x 4½	75	80	1050	1050
40 x 4½	75	80	1200	1200
34 x 5	80	85	950	950
35 x 5	80	85	1000	1000
36 x 5	80	85	1050	1050
37 x 5	80	85	1100	1100
39 x 5	80	85	1200	1200
41 x 5	80	85	1300	1300
37 x 5½	85	90	1150	1150
38 x 5½	85	90	1200	1200
2¼, all diams.	50	55	225	225
3 " "	60	65	350	350
Columb Tyres Import Co., New York, N. Y.				
Sec. 3½	65	65	750	750
Sec. 4	80	80	900	900
Sec. 4½	90	90	1100	1100
Sec. 5	100	100	1400	1400
Sec. 6	120	120	1550	1550
Michelin Tire Co., Milltown, N. J.				
Sec. 3 inch	50 to 60		600 to 1000	
Sec. 3½ "	60 to 70		800 to 1600	
Sec. 4 "	60 to 75		1300 to 2000	
Sec. 4½ "	70 to 80		1400 to 2600	
Sec. 5 "	70 to 85		2200 to 3200	
Miller Rubber Co., Akron, O.				
Sec. 3 inch	60	60	1800	1800
Sec. 3½ "	65	65	2400	2400
Sec. 4 "	75	75	2800	2800
Sec. 4½ "	85	85	3400	3400
Sec. 5 "	90	90	4000	4000
Sec. 5½ "	95	95	4500	4500
Sec. 6 "	100	100	5000	5000

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WIDE-AWAKE MERCHANDISING

FEAR TAPS MANY A CASH DRAWER—CHASE HIM OUT!

Do Not Hesitate to Charge a Full Price for Work That Is Honestly Done—Fear of the Customer Too Often Makes the Dealer or Garageman Accept an Unjust Loss.

The fear that the customer may object to the charge even though it is absolutely right and just; the fear that he won't pay what we know is only fair to ourselves to ask and receive, prevents many a dealer and garageman from showing a decent profit on his repair work. A loss may be pocketed, and it may be forgotten. But if constantly repeated it must show somewhere.

A man's time is worth what it costs plus overhead charges and plus a profit. Someone must pay for the time. Why should it not be the man who benefits?

There is no reason other than the **fear** on the part of the dealer that the customer may think he is overcharging.

Out in a small Michigan town a motorist stopped at a Ford garage. His Prest-O-Lite tank was not working. The rubber connection between the tank and feed pipe blew out every time the gas was turned on.

There was apparently some obstruction in the pipe line. Air pressure was applied without results. A wire was poked through in the effort to clear the passage. The piping was disconnected and taken out—not a small job. It was replaced and still the gas kept on bursting the hose. It wasn't in the pipe line.

The motorist suddenly remembered that there was a reducing valve on the dash. Perhaps it was closed. He examined it and discovered there the source of his entire trouble. His own stupidity was behind all the difficulty.

Four pieces of hose, worth at retail prices about 40 cents, had been used. The proprietor and his assistant had worked steadily for at least an hour and a half. Lights had been burned. Yet when the motorist asked, "How much do I owe you?" the proprietor thought a minute and then said, "Oh, I guess about 50 cents will be all right." Certainly it was all right for the car owner.

But was it all right for the dealer? From the standpoint of hard dollars and cents it certainly was not. And is there any other way for the dealer to figure?

He was dealing with a transient whom he probably would never see again. He could not excuse the smallness of his charge on the grounds that it might later lead to the sale of a car. It was no fault of his that the trouble was not sooner diagnosed. He was unfamiliar with the car. He had to try obvious methods before the solution was reached.

If he had charged $1.50 there could have been no objection. He had put in the time and done his best. What kept him from making the charge fair? **Fear** that the customer might object.

It is a foolish fear and the dealer who works honestly and keeps careful record of the time has no occasion to feel this fear. He should banish it once, forever.

THIS YOUNG MAN HAD HEAT-TREATED NERVE—THE DEALER?—HE HAD NONE

But the Dealer Is Waiting Until He Sees That Customer Again.

The man was young, but not at all bashful. He drove his car into the garage with a dash.

"Where's the proprietor?" he demanded briskly.

"Right here. What can I do for you?" inquired the owner of the garage.

"I want a new spark plug."

"Oh! All right," said the proprietor, as he hustled off to get a plug. He had been expecting nothing less than a request for a demonstration.

"Is that one of the 35-cent ones you had in your window?"

"No, but I'll get you one of them," and the proprietor made his way back and picked out one of his "Specials."

"Will you put it in for me, please?" The proprietor couldn't refuse.

The motorist stood by and when the plug was inserted started his motor.

"Doesn't sound any better," he remarked. "Must be in the carburetter." Then, with a sudden thought, "Would you mind adjusting my carburetter?"

The dealer fussed around the carburetter for about 10 minutes and got the motor working just right.

"Say!" said the motorist, "I guess I won't need that new plug after all. Would you mind taking it out and putting back the old plug? Funny, I thought it was the carburetter all the time!"

The dealer bit his lip to restrain a rush of language and got the old plug back.

"Much obliged, old chap. See you again!" called the young man to the dealer as he backed out the door.

Whereupon the dealer retired to his private office and did take much thought as to what his correct move might be should be chance to see him first.

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INDIVIDUALITY A SALE MAKER

Methods of Wide-awake Salesmen Bring in Business.

If a man and his wife should chance into the salesroom of the Wetmore-Quinn Co., Detroit dealer in Lozier and Paige cars, to "look over the Paige," as frequently happens, they would be met instantly by a really wide-awake salesman.

There would be nothing gushing or effusive about his greeting, but you—if it should happen to be you—would quickly realize that he was on the job to sell cars and please you and wasn't a bit ashamed of it. You would know that he was there to do business and believed in taking care of everyone who walked into the store.

Salesmen That Use Tact.

And if within a few moments the salesman observed that the wife was perhaps not deeply interested in the selling talk, she would be cordially urged to seat herself in the comfortable tonneau.

And without your knowing anything about it a demonstrator would appear at the outside curb as if by magic. Before you could realize what you were doing you and your wife would be driven by the salesman in that demonstrator to wherever you wanted to go.

The chances are ten to one that everything would have happened so logically that there would not have been the slightest opportunity for you to feel that the demonstration was urged upon you. The salesman simply made a suggestion to you that came out of something you had said.

Perhaps in the course of conversation you mentioned that you were "on the way to so-and-so." And quick as a wink the salesman suggested that you permit him to drive you there—but, you don't know or don't care how it happened. The salesman did not try to force you a bit and you think the Paige is a mighty fine car.

"Ninety per cent. of salesmanship is individuality," says Hughie Quinn. "A salesman must know his product by all means—but more than that, there must be something about the salesman that first-crack-out-of-the-box creates confidence. I call it individuality. It may be character. Maybe it should be called personality—but whatever you call it it is something people feel about you unconsciously and instantly and that makes them want to buy your car."



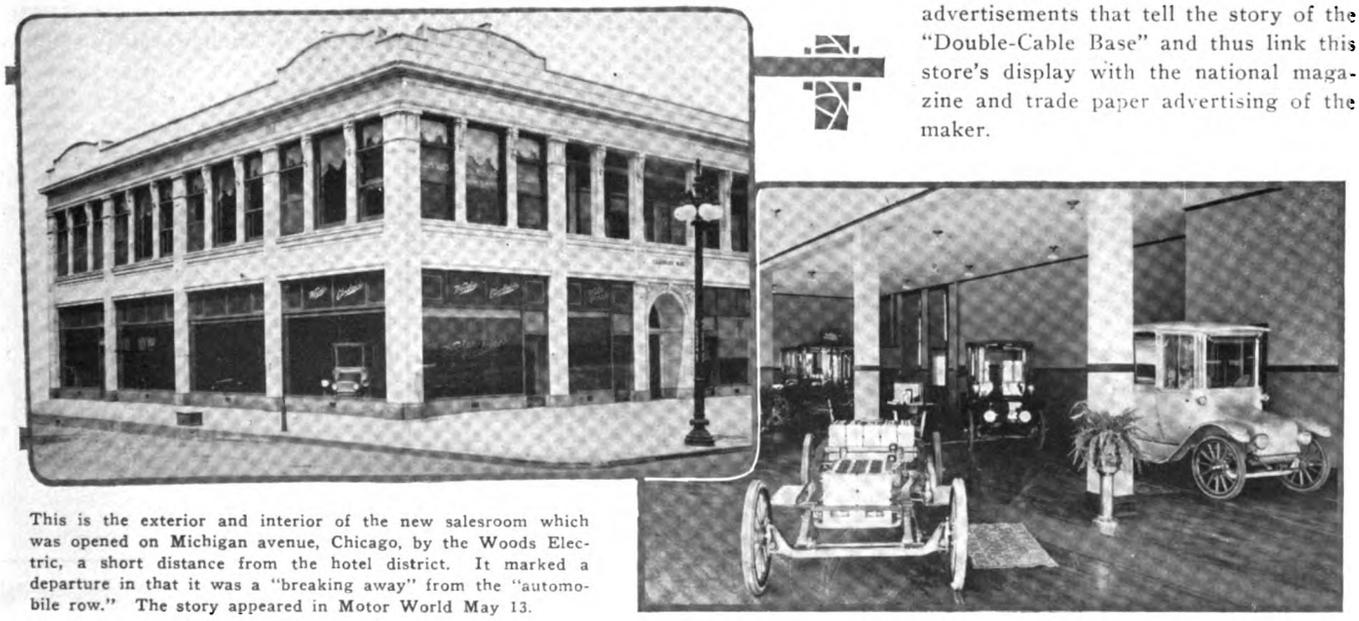
ALTHOUGH THE BERRY COMPANY SELLS HARDWARE IT MADE A BIG BID FOR THE TRADE OF TIRE BUYERS—IT DREW CROWDS WHEN LIGHTED AT NIGHT

DISPLAY OF SINGLE ARTICLES IMPRESSES

New Jersey Hardware Man Built Strong Window With Tires.

When you devote an entire window to the display of one article or one line, you make the kind of impression that actually sells goods. And isn't that what most dealers want their window displays to do for them?

The show windows of the S. H. Berry Hardware Co., Dover, N. J., were the means of selling many Federal tires. A study of the exhibit reveals the fact that the company took care to make front and side windows equally attractive and made liberal and effective use of the printed matter furnished by the manufacturer. Also, you will note there are several of the manufacturer's full-page advertisements that tell the story of the "Double-Cable Base" and thus link this store's display with the national magazine and trade paper advertising of the maker.

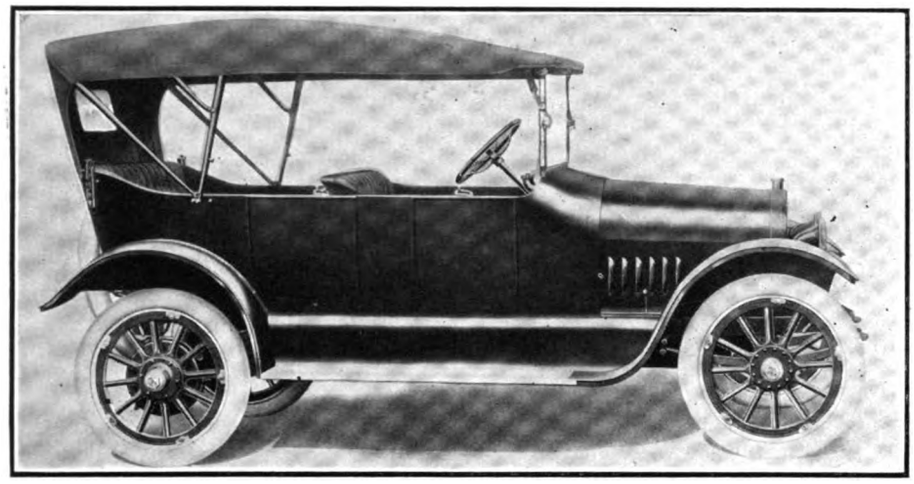


This is the exterior and interior of the new salesroom which was opened on Michigan avenue, Chicago, by the Woods Electric, a short distance from the hotel district. It marked a departure in that it was a "breaking away" from the "automobile row." The story appeared in Motor World May 13.

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King Car Bigger But Price Lower

Power Augmented By Increasing Bore of Cylinders and Comfort Increased By Making Seats Wider and Softer.



1915 KING REDUCED TO $1,075, DESPITE INCREASED SIZE AND POWER

The 1915 King price has been reduced to $1,075, although it is a larger car throughout and the bore of the motor made 1/16th inch larger. The standard equipment includes one-man top, quick-adjustable curtains, rain vision ventilating windshield, Stewart-Warner speedometer, electric horn, pump, jack and the usual tools.

As an option, the final gear ratio may be either 3 7/10 to 1 or 4 to 1, and the tread may be either 56 or 60 inches. For an extra charge of $90 the car will be equipped with the Ward Leonard electric lighting and starting system, which brings the price to $1,165. The 1914 model cost $1,095 without, and $1,195 with electric lighting and starting. Two bodies are mounted, roadster and five-passenger touring, and the price is the same for either.

In the new body both appearance and comfort have been studied in the changes that have been made. Though the body has a narrow appearance, the rear seat really is 3 inches wider than formerly, the width being 46 inches. The radiator is coped, the mudguards are crowned and conform closely to the wheel circles and the lines generally smoothed out and simplified. Clear running boards are obtained by placing the storage battery and the tool box under the front seat and the tire carrier at the rear of the body.

The car is steered from the left; the gear is a Gemmer. The spark and throttle levers on the wheel are unusual in that they are of cast aluminum instead of steel or bronze. The button for sounding the electric horn is conveninetly placed in the center of the wheel.

SELLING FEATURES OF THE KING FOR 1915 SEASON

Price, touring or roadster	$1,075
Color	Dark blue and black
Make of motor	King
Number of cylinders	Four
Shape	L-head
How cast	Block
Bore	3 15/16
Stroke	5
S. A. E. horsepower	24.6
Ignition	Atwater-Kent
Carburetter	Stromberg
Clutch	Multiple disk
Wheelbase	113
Tires	33 x 4
Wheels	Wood
Steering	Left
Control	Center
Make of axle	Am. Gear & Mch. Co.
Type of axle	Floating

Options: Gearing, 3 7/10 to 1, or 4 to 1. Tread, 56 or 60 inches.

Equipment: One-man top, rain vision ventilating windshield, envelope and quick attachable side curtains, Stewart-Warner speedometer, electric horn, extra rim, pump, jack, tools and tire repair outfit.

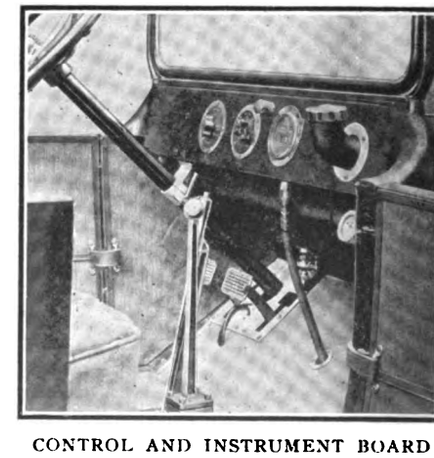
The motor has been but lightly touched in making changes. The cylinders have been bored 1/16th larger, measuring 3 15/16 inches, while the stroke remains 5 inches. The increase in the bore adds appreciably to the power output. The motor, with its four block-cast cylinders, is of the L-head type, is built as a unit with the three-speed gearset and is carried on a three-point suspension. The motor is of conventional design and of substantial construction with crankshaft 1 11/16 inches in diameter, running in three bearings 3⅛, 3 and 4 inches long from front to rear; the connecting rod bearings are 2⅝ inches long. Lubrication is effected by a combination of force feed and splash, and an oil gauge indicates the quantity of lubricant in the reservoir.

An Atwater Kent ignition system replaces the magneto. The unisparker is mounted on the right side of the engine, and works in connection with a coil mounted on the dash. The carburetter is a model C Stromberg. By placing the gasolene tank in the cowl instead of under the front seat, as formerly, it has been possible to shorten the intake pipe and place the carburetter higher, making it more accessible and reducing the piping and tendency toward condensation of the fuel. The radiator now is of the honeycomb type instead of tubular.

Provision has been made, as already stated, for the installation of the Ward-Leonard lighting and starting system, which entails an extra charge. The starting motor and the generator are separate units, mounted with the generator just below the unisparker on the right side of the engine and driven by silent chain from the timing shaft, and the motor mounted on a bracket attached to the gearbox and driving to the flywheel through gears.

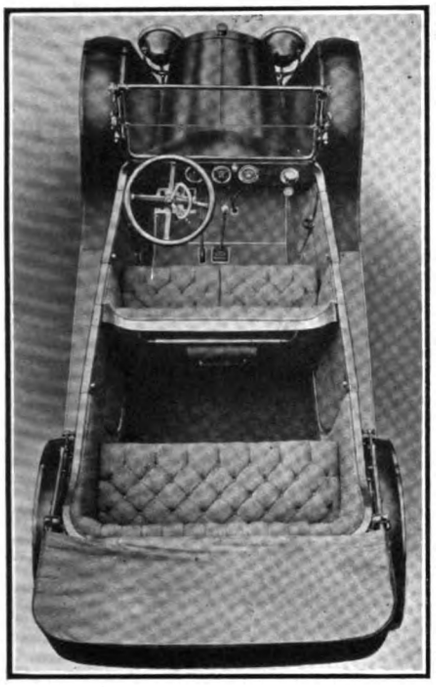
The generator runs at twice the engine speed and its maximum output is reached at a car speed of from 10 to 15 miles an hour. An automatic controller prevents the overcharging of the battery, while permitting full charging rate at a moderate car speed. The battery is a Willard, of 80 ampere-hours capacity.

The pull-up handle formerly employed in connection with the starting system has been replaced by a lever placed be-

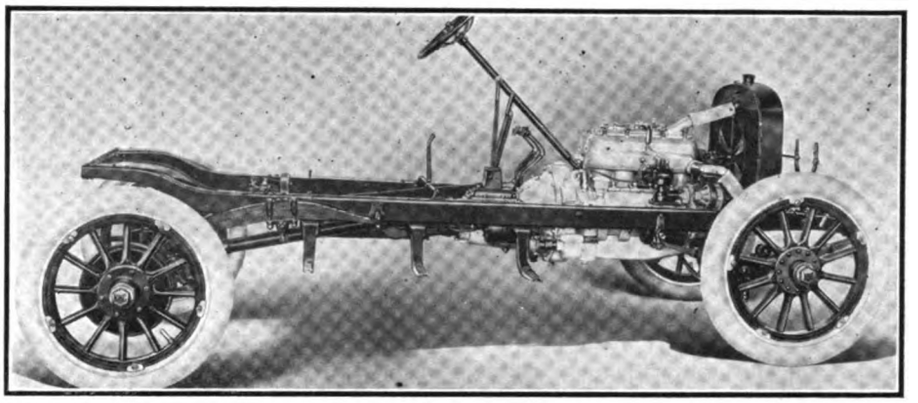


CONTROL AND INSTRUMENT BOARD

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INTERIOR, SHOWING ROOMY SEATS



KING CHASSIS SHOWING CANTILEVER REAR SPRING SUSPENSION

tween the front seats, at the right of the driver; the lever is pushed forward to start the motor.

The multiple disk clutch has 8 bronze driving disks, containing 320 cork inserts, and 9 steel driven disks instead of all steel disks, and runs in oil supplied by overflow from the motor base. There is no thrust on the motor or gearshaft bearings when the clutch is not engaged. The three-speed gearset has its shafts mounted on Hyatt roller bearings and is operated by a central lever mounted just over the case. The lever is a little shorter than on the previous model.

A single universal joint is placed at the forward end of the propeller shaft, which works in a steel torque tube. When the car is normally loaded the drive is practically a straight line drive to the rear axle.

An improvement in the torque tube mounting consists in attaching the forward end of the tube to the rear end of the gearbox by a sliding joint which permits free play of the tube longitudinally and eliminates excessive thrust on the universal joints. In the 1914 model the torque tube was not attached to the gearbox but was supported by the propeller shaft, upon which it was free to shift longitudinally.

But one change has been made in the spring system. The old method of attaching the rear ends of the rear cantilever springs to the axle housing by a plate and sleeve arrangement has given way to the adoption of an eye, of the ordinary type, in the end of the spring, through which passes a fitted bolt anchored in two brackets rising from a split sleeve mounted on the housing of the rear axle.

The semi-floating axle has been replaced by a full-floating design and the housing, instead of being a casting, is of pressed steel and is some 50 pounds lighter. The wheelbase is now 113 inches, instead of 112 as formerly.

Brakes are internal and external on 14-inch drums, and the internal brakes, which are for emergency application, are expanded by cams instead of by toggles, as in the preceding model.

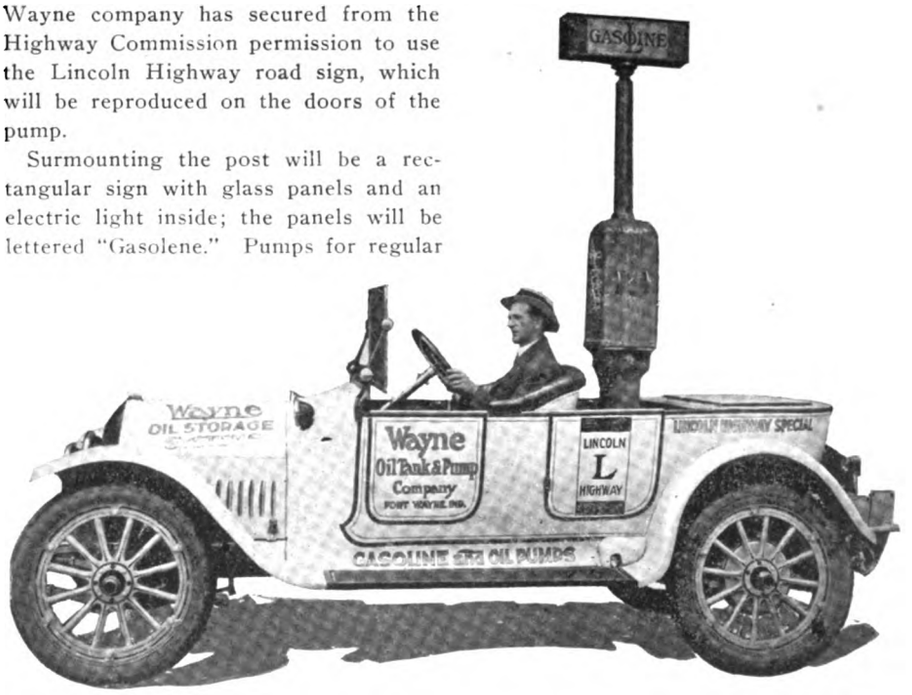
Traveling Pump Makes Publicity

By way of calling attention to the fact that it manufactures gasolene pump outfits and that it intends to install them along the Lincoln Highway, the Wayne Oil Tank & Pump Co., Fort Wayne, Ind., is preparing to send over the route of the transcontinental road a special car which, as the accompanying illustration shows, will "speak for itself."

The machine is a five-passenger touring car, the rear part of which carries a standard Wayne gasolene pump of the type that will be finished especially for use along the Lincoln Highway. The Wayne company has secured from the Highway Commission permission to use the Lincoln Highway road sign, which will be reproduced on the doors of the pump.

Surmounting the post will be a rectangular sign with glass panels and an electric light inside; the panels will be lettered "Gasolene." Pumps for regular service will be lettered the same as the one on the car, or the word "Garage" will be put on if the purchaser prefers it. The whole pump is finished in red enamel.

The car will be painted white with red and blue trimmings, and as the illustration shows, the Lincoln Highway sign will appear on the tonneau doors, and elsewhere there will be lettering that will call attention to the Wayne product. The machine will be sent over the entire Lincoln Highway route from San Francisco to New York.



WAYNE GASOLENE PUMP IN CAR READY FOR LINCOLN HIGHWAY TOUR

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Advanced Maintenance

REMOVING AND REPLACING TANK HEAD

By George Fernwell

We may now consider the proposition of removing the head without shortening the tank and with a minimum risk of fire or explosion. A method which has been found to work out very well in parctice, with the exercise of common caution, is here described.

There is considerable preparatory work involved and should there be no further use for such preparation beyond the repairing of just a single tank it must be left to the workman's own judgment to decide whether it is worth while. To offset the latter it may be added that the removal of the head when the preparations are once completed takes just about five minutes; therefore it depends upon the facilities a workman may have available whether or not the time spent in preparation will be offset by the negligible amount of time required to take out the head.

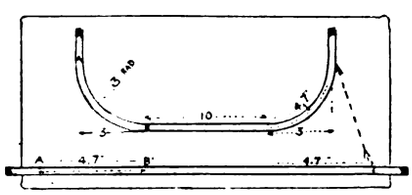


FIG. 1—MARKING OFF PIPE FOR MAKING LOOP GAS BURNER USED IN HEATING TANK HEAD TO MELT SOLDER AND PERMIT REMOVAL

The first thing required is a continuous ring or loop-shaped gas burner conforming approximately to the outline of the gasolene tank. It should be large enough so that it will pass over the tank with an average interval of an inch to an inch and a half between the outside of the tank and the inside of the loop.

Loop Burner for Heating Tank.

As shown in Fig. 3, the loop-shaped gas burner is made of gas pipe bent to the required shape and connected with ordinary gas fittings. All around the inner face of the loop a series of holes are drilled 3/64 of an inch in diameter at intervals of about one-quarter to half an inch. The length of pipe which supplies gas to the loop may be from two to three feet in length, so that when using this as a handle the workman may stand well away from the tank for the sake of safety.

It may be of service here to submit a method of locating accurately the portion of the pipe required to be bent and the method of bending gas pipe without the need for filling and still prevent any appreciable flattening of or kinking of the pipe as a result of bending without filling. Fig. 1 will be almost self-explanatory in showing how to locate the portion of the pipe to be bent. The method here illustrated and described will be found serviceable in bending gasolene, water and exhaust piping.

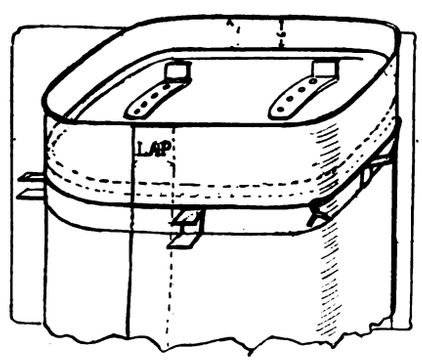


FIG. 2—SHEET METAL GUARD PLACED AROUND END OF TANK AND HELD BY WIRE TO KEEP EXPLOSIVE VAPOR FROM REACHING BURNER FLAMES

To make clearer the meaning of Fig. 1, dimensions are used which are not intended to be taken as having any relation whatever to a job of this character. It can be seen that the outline of the loop-shaped gas burner does not coincide with the cross section of the tank. It is shown this way in order to simplify matters and not to lead the workman into a great deal of unnecessary work in making the gas burner exactly the same shape as the tank.

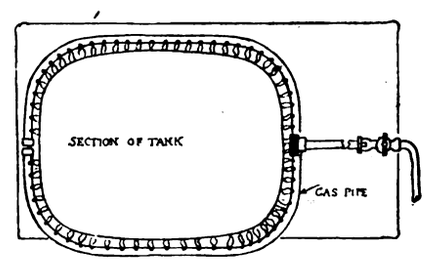


FIG. 3—HEATING BURNER MADE OF BENT GAS PIPE—BURNER SHOWN IN PLACE AROUND END OF TANK WITH SMALL FLAMES IMPINGING ON TANK

Marking Pipe for Making Bends.

On Fig. 1 it can be seen that 10 inches must be marked off midway of the length of pipe which is assumed to have been cut the right length and threaded at each end. Then the circum-

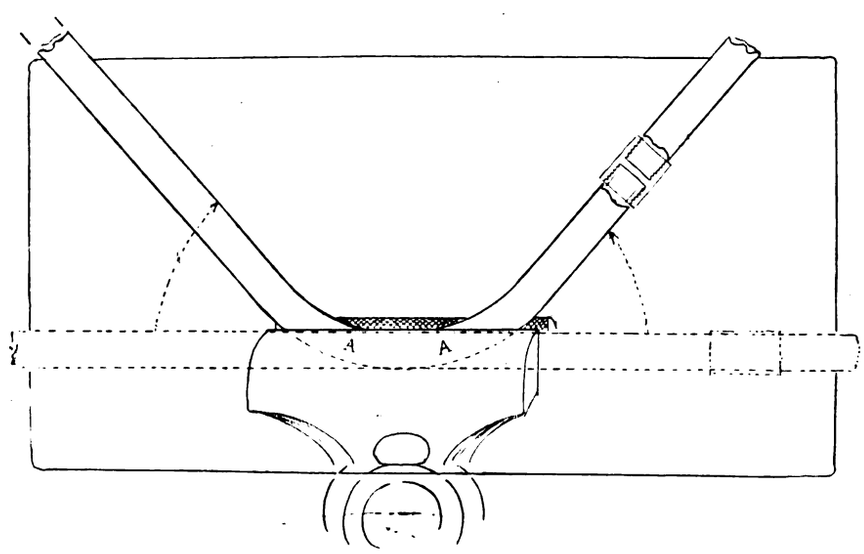


FIG. 4—BENDING PIPE TO FORM GAS BURNER—PIPE IS HEATED, GRIPPED LIGHTLY IN VISE ENDS AND BENT UPWARD—TEMPORARY EXTENSION GIVES ADDITIONAL LEVERAGE

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ference of each bend at the axis or middle line of the pipe must be marked off, leaving an equal length of pipe at each end.

The part of the pipe required for each bend should be completely covered with chalk marking that can be readily seen when making it red hot in a forge or with a blow-pipe. Everything being ready to heat and bend, see that a vise is convenient and the jaws open wide enough to receive the pipe. A vise which is somewhat worn is preferable for the purpose, for in a new vise the jaws are apt to be roughened.

Heating and Bending Burner Pipe.

Proceed to heat the portion of the pipe to be bent. Heat the pipe red hot uniformly the entire length of the chalk marking or the assumed distance of 4.7 inches, as would be indicated by Fig. 1, provided those were the required dimensions of the job in hand. When the pipe is heated as directed take it quickly to the vise and let an assistant close the vise jaws until the pipe is just barely gripped without crushing.

Try to locate the middle of the part to be bent as near to the center of the length of the vise jaws as possible, without delay, however, otherwise the pipe will become too cold to bend. The upper surface of the pipe should be as near the top of the vise jaws as possible. With the pipe lightly gripped, raise both free ends of the pipe until they are at right angles. The series of motions referred to must be performed quickly or the heated part of the pipe will become too cool to bend freely.

Fire Risk from Vapor in Tank.

Remove the pipe from the vise and cool the heated end; remove the short length of pipe and coupling to the opposite end and proceed to heat and bend the pipe at that end. In the same manner proceed to bend the remaining straight pipe to form the duplicate half of the loop. After drilling the holes for the flame jets, with the necessary pipe fittings assemble the loop as shown in Fig. 3.

A length of pipe about three or four feet long as a gas supply pipe affords a convenient handle and permits the workman to stand well away from the gasolene tank.

While the risk of fire from the infinitesmal amount of vapor which may still be inside the tank is very slight, it is not advisable to use the gas burner for removing the head of the gasolene tank anywhere but in a fire-proof shop or out of doors.

There is sometimes considerable sediment or deposit of a gummy or oily nature clinging to the inside of the tank. This presumably when heated by the application of the gas flame to the sides of the tank gives off an inflammable vapor. The precise moment at which there is danger of this vapor catching fire is after the flame of the gas burner has melted the soldered seam all around and the head has been driven downwards out of the seam far enough to tilt the head in an oblique position, permitting the vapor to escape through the opening thus formed.

When Gas Should Be Turned Off.

If the workman is able to judge correctly when the solder is completely melted all around the seam, and by

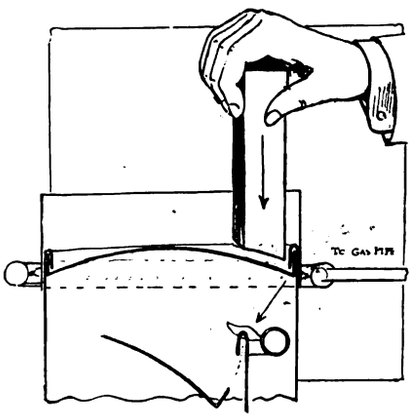


FIG. 5—USING HEAVY WOOD BLOCK TO KNOCK TANK HEAD INWARD AFTER SOLDER HAS BEEN MELTED BY GAS BURNER

judicious blows all around on the head he has driven the head downward, partly out of the seam all around, he may then turn out the gas and by quick work completely detach the head from the seam until it falls inside the tank before the solder seam can have time to cool again and prevent the head being completely detached.

Metal Shield to Protect Burner.

By this means of combining judgment with quick action the risk of fire can be eliminated.

Fig. 2 shows a safeguard which would be well, on general principles, to adopt. It consists of a strip of very thin sheet-iron about 26 or 28 gauge and possibly 8 inches wide and long enough to bend and extend completely around the tank with a lap ow 3 or 4 inches. This sheet metal shield may be readily held in position by a length of soft iron wire, twisted as shown. The conditions, when employing the described safeguard, are, that the vapor which might escape will, even in the event of its rising, which is unlikely, be at least 6 inches above the flame of the gas burner.

Assuming all precautions to have been taken and realization arrived at of the necessary care required, a summary of the procedure necessary will not be out of place, even at the risk of repetition. Drain every atom of gasolene from the tank, or completely fill the tank with hot water, empty it and let it cool. Stand the tank firmly on one end, out of doors if possible, with the end to be extracted uppermost.

Melting Solder in Head Seams.

Bind the sheet-iron shield tightly around the upper end, so that there are no openings through which flame or vapor can penetrate. Should there be any openings fill them with fire clay. Connect the gas loop by means of a hose and stop-cock to a source of gas supply. Turn on the gas and light the burner. Drop the loop over the flame shield as shown in Fig. 3, so that it is supported in the most favorable position to permit the flame to heat the soldered seam of the head to be removed.

Obviously the heat of the flame must be transmitted through the wall of the flame shield before having any effect on the seam. Watch the appearance of the seam as it becomes heated and as soon as melted solder can be detached with an iron rod from the seam, lightly tap the head with a wood block all around, adjacent to the seam, with the object of driving the head downwards about an eighth of an inch all around.

Loosening Head With Wood Block.

As soon as this can be done let the flame remain for a half minute longer and then turn it out. Then with quick hard blows of the wooden block, supplemented if necessary by a heavy mallet or hammer, completely dislodge the head until it falls inside the tank. To repeat once more, the main rule to observe is to not have the gas flame alight when in the act of completely dislodging the head; and incidentally to leave the filler cap off, also being sure that the seam is thoroughly melted all around.

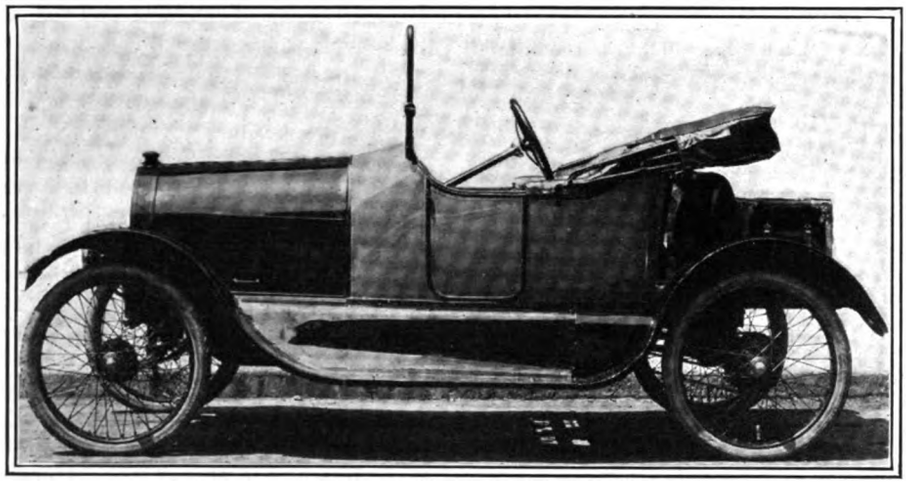
It is preferable when there is a choice that the head furthest from the filler be the one removed. Should the head nearest the filler have to be removed the filler cap should be left off and a short cardboard or sheet metal tube inserted in the filler opening with as good a fit as possible. The object of this tube is to conduct vapor escaping from the tank away from proximity to the flame.

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New Dodge Light Car Sells for $495

Has Four-cylinder Block Motor With Overhead Valves, Magneto Ignition, Wire Wheels, Friction and Side Chain Drive—Weighs But 1400 Pounds "All On."

The first product of the Dodge Motor Car Co., Detroit, Mich., which is a separate and distinct organization and has nothing whatsoever in common with Dodge Bros., who are expected shortly to make public the details of their car, has made its appearance. It is a 2-passenger roadster which sells nominally for $495 and for $595 with such equipment as electric cranker, top, windshield, electric generator and battery, extra size tires, and electric horn. Despite the fact that the car is a full-sized one, with standard tread and a wheelbase of 102 inches, the weight with the tanks filled is but 1,400 pounds.



DODGE ROADSTER WHICH SELLS FOR $495 AND WEIGHS ABOUT 1,400 POUNDS

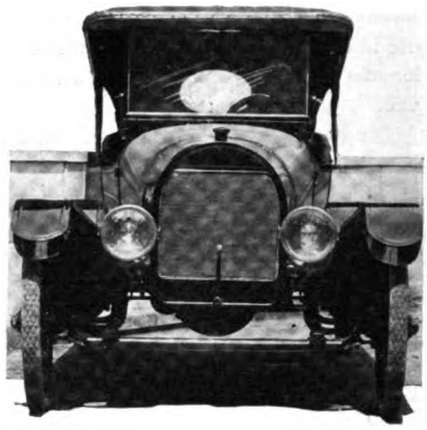
PRINCIPAL FEATURES OF DODGE LIGHT ROADSTER

Price, equipped	$595
Price, not equipped	$495
Color	Gray and black
Number of cylinders	4
Shape	Valve-in-head
How cast	Block
Bore	3 11/16
Stroke	4
S. A. E. horsepower	21.6
Ignition	Magneto
Carburetter	Zephyr
Engine starter (extra)	Auto-Lite
Lighting system (extra)	Auto-Lite
Transmission	Friction
Wheelbase	102
Tread	56
Tires	30 x 3
Wheels	Wire
Steering	Left
Control	Center
Rear axle	Tubular
Drive	Double chain

Equipment (extra): Top, windshield, electric lighting and engine starting system, electric horn, 30 x 3½ tires.

The Dodge light car has a four-cylinder, water-cooled valve-in-the-head engine, with a bore of 3 11/16 inches and a stroke of 4 inches. This is said to develop full 25 horsepower, which is ample power to pull the light chassis through any kind of road. Speeds from 3 to 45 or 50 miles an hour are attainable, while it is further stated that economy of fuel is another notable feature, 30 miles to the gallon of gasolene being the rule.

The engine is equipped with the usual form of rocker arms to operate the overhead valves, the push rods running upward from the tappets on the left side. The valve mechanism at the top of the cylinders is completely enclosed by an aluminum cover plate. Two nuts permit of its removal.



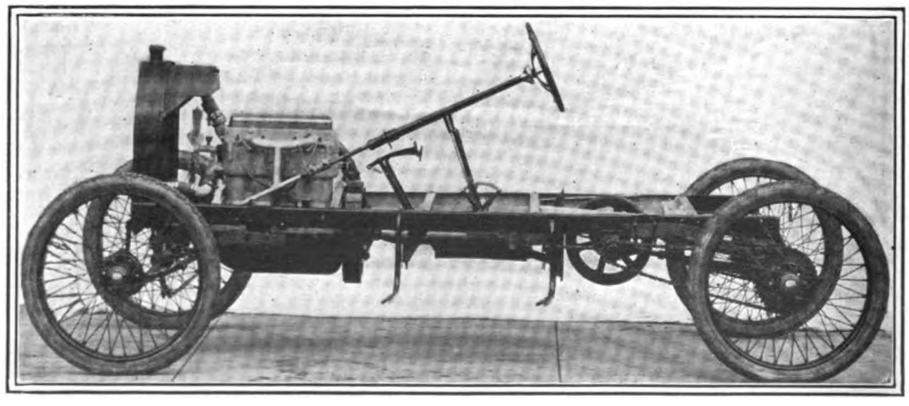
FACE TO FACE WITH THE ROADSTER

The cylinder head itself is detachable, making it possible to remove pistons and connecting rods through the top. The spark plugs are set into the head castings at an accessible angle, while the exhaust manifold is integral with this head, the outlet being through a single opening, thus eliminating back pressure. The intake manifold with two branches is located on the opposite side—the right—and is not integral, but bolts in place.

A three-bearing crankshaft, a camshaft with an equal number of supports and large valves made possible by the head construction indicate that the motor is substantially and properly designed. The valves have a clear opening of 1½ inch. The principal bearings are brass backed.

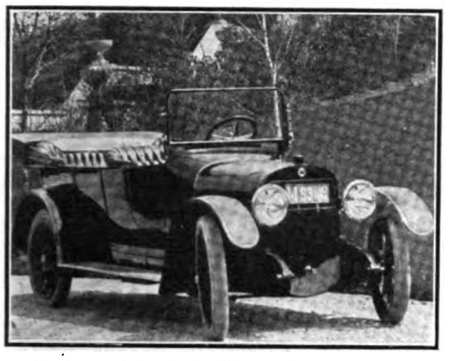
The oiling is by splash, with positive pump feed, a sight feed being mounted on the dash; ignition by a high tension system; cooling by thermo-syphon with a belt-driven fan, and a Zephyr one-inch carburetter are other features taking care of various engine functions.

The motor is carried on two bowed cross pieces, front and rear, and its flywheel is not enclosed. The driving shaft runs directly from it back half way of



CHASSIS, SHOWING OVERHEAD VALVE BLOCK MOTOR AND FRICTION DRIVE

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FRONT OF PREMIER TOURING CAR

the chasis to the friction disk transmission mechanism mounted on a frame cross member. This friction drive is of the standard type, the disk being mounted to slide on the end of the shaft so as to be brought against and released from the friction wheel which revolves at right angles to the disk. This wheel is carried on a jackshaft, from the outer ends of which chains run back to the rear axle and outside of the frame rails.

The friction disk control lever is at the right of the driver, the steering wheel being on the left side. This lever operates the friction wheel across the face of the revolving disk to any desired position. Working from the center to the left on the disk, any ratio between 3 to 1 and 100 to 1 may be obtained between the speeds of the two driving members. The reverse is obtained by moving the wheel beyond the center.

The side drive chains are enclosed against dirt and noise and run in oil; the axle to which they connect is a 2-inch tubular member. There are two sets of internal expanding brakes on axle drums, and these are operated through the usual type of equalizer bars.

The frame is a channel section type of pressed steel and narrows from a point a little back of the center to the front. The chassis is carried on cantilever type springs front and rear. These are rigidly fastened to the frame at their big ends and clipped to the axles at the small ends.

Wire wheels carried on ball bearings are standard as is also the placing of the 10-gallon gasolene tank on the rear deck.

A feature of the standard equipment which lends greatly to the appearance is the small luggage trunk which is placed on the rear deck.

Fenders hug the wheels in up-to-date fashion, while the finish is of gray with black running gear. The seat width is really sufficient for two adults and a child—it measures 40 inches. The depth is 17 inches, and the leg room is 31 inches.

The Dodge company expects to make deliveries within a month.

Single Chassis for T-Head Premiers

Only Semi-elliptic Rear Springs Distinguish Model 6-49 From Predecessor, Which Had Three-quarter Elliptics—Three Body Types Mounted.

A single chassis, model 6-49, will carry the Premier cars for 1915, built by the Premier Motor Mfg. Co., Indianapolis, Ind., as far as present announcements indicate, and with a few slight changes the chassis is identical with the 6-48 of the 1914 series. Three bodies will be mounted. The roadster and 5-passenger touring car will sell for $2,385 each and the 7-passenger car for $2,435.

The only important chassis change is the substitution of 60-inch semi-elliptic springs in the rear for the 1914 three-quarter elliptics, and the slight alterations necessitated by the change of springs.

The equipment list is very full. The Remy electric lighting and starting system is fitted, the headlights being of the two-bulb type; there are no side lights. Other items are a motor-driven tire pump, gasolene gauge, shock absorbers and recoil straps, Golde one-man top, single-piece ventilating windshield, Warner speedometer, in addition to the conventional outfit of tools, jack, tire repair kit, and so on.

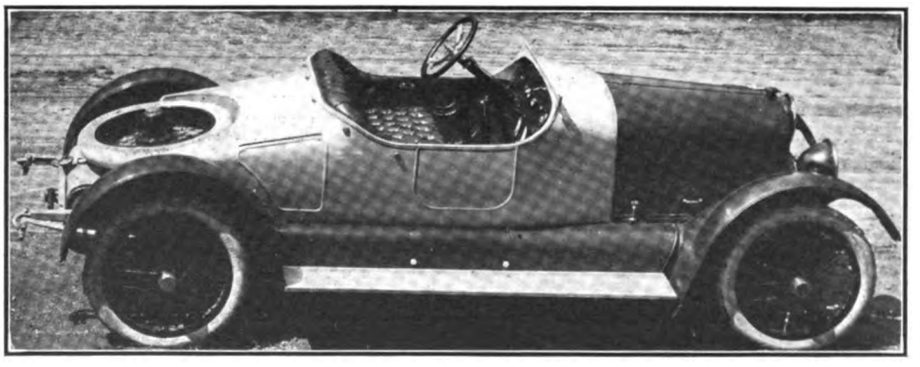
The Premier has a unit power plant consisting of a T-head motor, 4 x 5½, with cylinders cast in threes, mounted with a three-speed gearset, the connecting link being a multiple disk clutch. The S. A. E. rating is 38.4 horsepower. Cylinders are made with large top openings in the packets, over which are light aluminum covers. Lubrication is by a constant level splash system with the usual crankcase troughs and circulation maintained by a gear-driven oil pump; a sight glass on the dash shows the flow. Fuel is fed by pressure. Ignition is by Eisemann magneto.

The gearshafts run on annular ball bearings in the oil-tight case; tightness is secured by fitting the shafts with stuffing boxes which preclude the leakage of oil or grease. The propeller shaft is fitted with two universal joints, one at each end.

The rear axle, patented by the Premier people, is of the type usually known as three-quarter floating. The driving shafts carry none of the load, but cannot be withdrawn until disconnected from the differential gears. Drive to the wheel hubs is through clutch jaws forged integral with the shaft ends. Internal ribs in the housing make the use of truss rods unnecessary. The service brakes are internal and the emergency brakes external, the former of the shoe type an dthe latter having the usual contracting bands.

Wheels are of either wood or wire, at option, in the roadster, with tires 36 x 4½, while wood wheels are standard in the touring cars and the tires may be either 34 or 36 x 4½.

Body framing is of oak braced with steel and the sheathing of metal. Battery and tool boxes are carried under the running-board apron, part of which is removable to give access to them. Provision for carrying a spare wire wheel or two spare tires is made in the roadster by having a circular depression of the proper size and depth in the rear deck. In the touring car there is a carrier at the end in which two tires can be held.

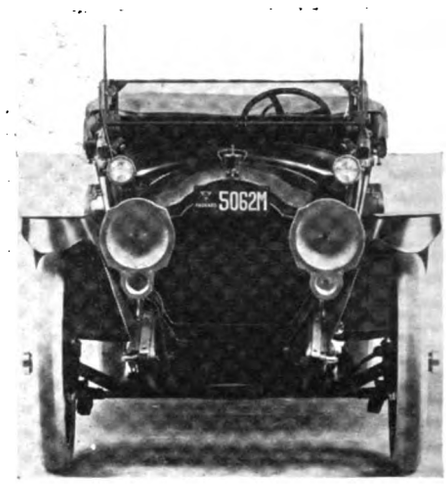


PREMIER ROADSTER, SHOWING TIRE NICHE IN REAR DECK

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Packard Increases Power, Not Price

Efficiency Increased by Carburetter and Valve Refinements Without Enlarging Motor—Headlights Redesigned—Closed Body Added to Line.



FRONT OF 3-38 SHOWING NEW LAMPS

Only slight changes have been made in the Packard 3-38 and 5-48, the successors of the 2-38 and 4-48, and no changes whatever in the prices. The 7-passenger touring car with the smaller motor costs $3,850 and with the larger motor $4,850; the 5-passenger phaetons $3,750 and $4,750; the roadsters the same as the phaetons; the limousines $5,000 and $6,000, and the 3-passenger coupes $4,450 and $5,450.

Equipment includes top, boot and curtains, windshield, two extra rims, tire holders, trunk rack, pump, tools, etc. Power tire pump and speedometer are furnished on the 5-48 and are extra on the 3-38.

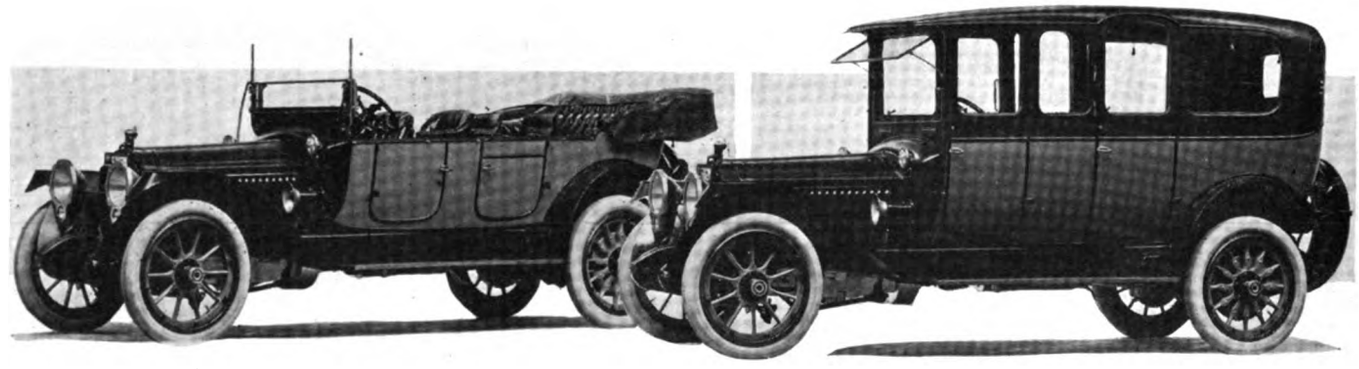
Of the 20 body styles offered, the three-window salon brougham is the latest, having a low roof and narrow body and a particularly attractive appearance. While the coupe has not been changed much so far as outward appearance is concerned, it has been widened so that three persons can be accommodated on the rear seat and a fourth on the auxiliary seat. A small window in the left rear corner is an added convenience.

So far as the exterior is concerned the most conspicuous change is in the lamp design. The big electric headlights each have an auxiliary electric bulb, each with its individual reflector, for city driving, and the side lights have been reduced in size. All the lamps are controlled by buttons on a control board mounted on the steering column.

The carburetter has been altered to provide a housing for the auxiliary air valve, and the opening has been turned toward the rear to reduce the chance of getting dirt into the carburetter. The hot water jacket and heated intake manifold are continued without change. An increase of power has been effected, without increasing bore or stroke, by slightly increasing the sizes of the valves, changing the timing a little and a few other refinements.

Both cars are exactly alike, so far as design is concerned. The motors are of the L-head type, with cylinders cast in threes; the smaller has a bore and stroke of 4 x 5½ and the larger 4½ x 5½; the S. A. E. ratings are 38.4 and 48.6, respectively. Ignition is by the Bosch duplex magneto and starting and lighting by Packard-Bijur system. The lubrication system is double in that an extra throttle controlled oil feed is provided for hard service.

Motor and gearset are separate units, the latter being built on the rear axle. The rear axle is of the full floating type. On the 3-38 the tires are 36 x 4½ front and 37 x 5 rear, and on the 5-48 37 x 5. Wheelbases are 140 and 144 inches.

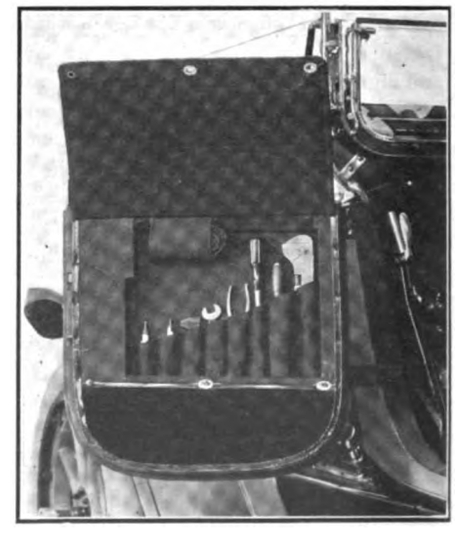


SIX-PASSENGER SALON TOURING BODY AND SALON LIMOUSINE, BOTH ON PACKARD 3-38 CHASSIS

SALIENT POINTS OF THE TWO LATEST PACKARDS.

	3-38	5-48
Prices:		
7-passenger touring	$3,850	$4,850
5-passenger phaeton	3,750	4,750
Roadster	3,750	4,750
7-passenger Limousine	5,000	6,000
3-passenger coupe	4,450	5,450
Make of motor	Packard	Packard
Number of cylinders	6	6
Shape	L-head	L-head
How cast	Threes	Threes
Bore	4	4½
Stroke	5½	5½
S .A. E. horsepower	38.4	48.6
Magneto	Bosch duplex	Bosch-duplex
Starting-lighting	Packard-Bijur	Packard-Bijur
Clutch	Multiple disk	Multiple disk
Gearset	Semi-selective	Semi-selective
Wheelbase	140	144
Tires, front	36 x 4½	37 x 5
Tires, rear	37 x 5	37 x 5
Steering	Left	Left
Control	Center	Center
Rear axle	Floating	Floating

Equipment: Top with envelope and side curtains, windshield, lamps, starting-lighting system, 2 extra rims, tire holders, trunk rack, jack, pump and tools, etc. Power-driven air pump and speedometer on 5-48, extra on 3-38.

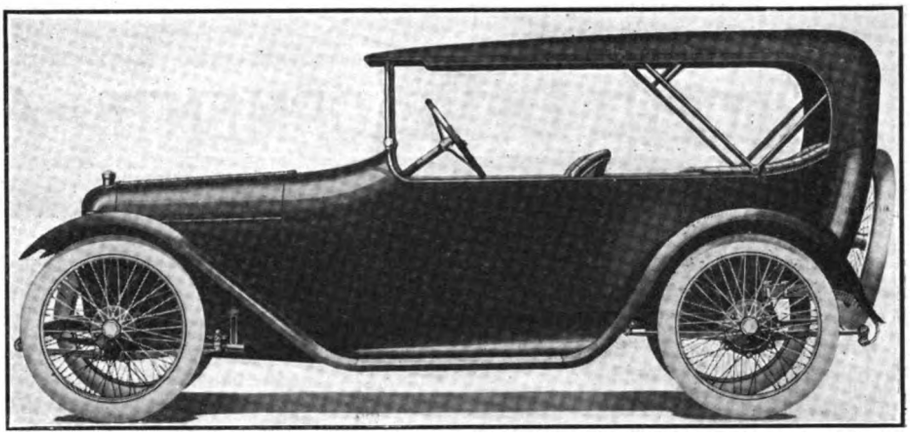


PACKARD TOOL KIT IN DOOR CASE

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FISCHER $595 LIGHT CAR HAS STANDARD FEATURES

Five Body Types Built on Single Chassis With 104-inch Wheelbase—Range from Stripped Speedster to Sedan.



FISCHER FOUR-PASSENGER TOURING CAR, MODEL D, WHICH SELLS FOR $645

A newcomer in the light car field is the Fischer, which is to be made in quantities in Detroit by the C. J. Fischer Co. This car, with a wheelbase of 104 inches and standard tread of 56 inches, is to be equipped with five body types, all of exceedingly attractive appearance.

The selling prices range from $595 for the speedster, model A; $595 for the 2-passenger touring, model B; $645 for the 2-passenger cabriolet, model C; $645 for the 4-passenger tourist, model D, to $845 for the 4-passenger sedan, model E.

The motor used is a standard Perkins type, made by the Massnick-Phipps Co., Detroit. It has a bore of 2¾ inches and a stroke of 4 inches, giving an S. A. E. rating of 12.08; the motor readily turns up 15 horsepower. The power plant is of the three-point suspended type, the gearset being in unit with the engine proper.

The cylinders are cast in block and are of L-head type, with the valves on the left and enclosed by cover plates in the usual manner. The crankcase is of the barrel type.

The motor has a three-bearing crankshaft, which is of ample size to reduce vibration to the minimum. The construction of the crankcase is such that the shaft may be removed through the rear, a plate carrying the rear being bolted to the case substantially, and when unfastened giving sufficient opening to permit the shaft to pass through.

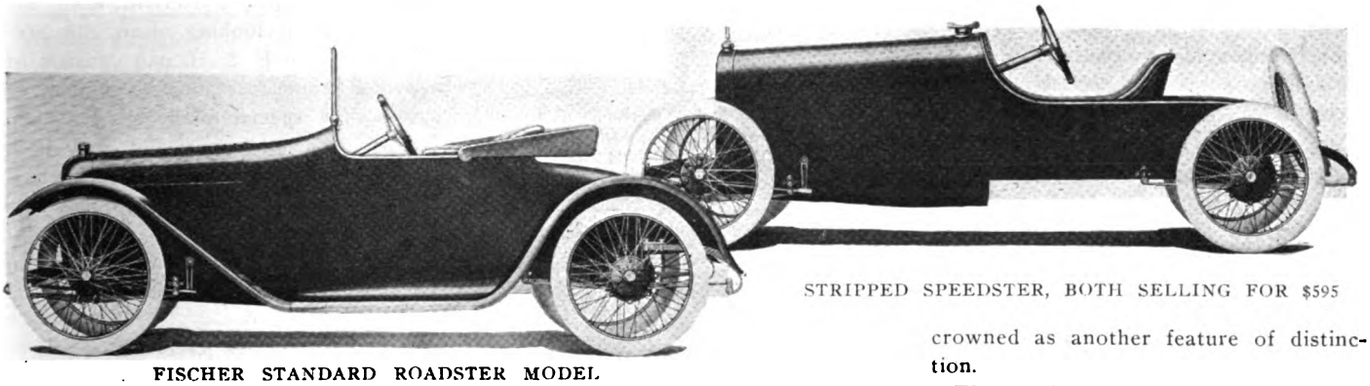
An unusual feature of the motor is the manifolding on the left side. The intake and exhaust are really cast in one piece, the passages to the various openings and to carburetter and exhaust pipe being cored within the casting. The exhaust passes above the intake and there is an opening to each cylinder. Below this there are the two passages to the intake ports, a short pipe from the carburetter connecting to this casting at the center. The exhaust pipe joins the combination manifold at the rear. This construction has the advantage of assisting gas vaporization and should make for a better atomized mixture.

The oiling is done by a plunger pump and a splash from the ends of the connecting rods dipping into the individual oil troughs under the cylinders. Cooling is by thermo syphon and ignition by the Atwater-Kent distributer system.

Springs front and rear are made of sufficient length to make for very easy riding qualities. They are all mounted under their respective axles, which serves to lower the hanging of the bodies in modern fashion.

Although the standard wheel equipment of all models except the model A speedster are artillery wood type, a set of five Houk wire wheels may be had for $30 extra. The model A is equipped with these regularly. Tires on models A. B and C are 30 x 3, while the others take 31 x 3½ size. The wood wheel outfits are fitted with demountable rims.

Lending to the appearance of the Fischer cars is the V-shaped radiator, which has been well designed to be proportionate to the size of the chassis. Besides being of V form its top is rounded so as to take away any abrupt line at the front and when looking at the car from the side. The fenders are crowned as another feature of distinction.



STRIPPED SPEEDSTER, BOTH SELLING FOR $595

FISCHER STANDARD ROADSTER MODEL

The equipment, besides the electric generating and cranking system, consists of an extra demountable rim, speedometer, windshield, top, top envelope, kit of tools, jack and tire pump.

Propose Cyclecar Reliability Contest.

What is said to be the first cyclecar reliability run in America will be staged September 5, 6 and 7, from Newark to Philadelphia and return. Entries close August 20. The entry fee will be $10 per car and blanks and information may be obtained from Dr. Charles G. Percival, Tenneck, N. J., chairman of the National Touring Committee of the Cyclecar Association of America, which has sanctioned the run.

The itinerary of the proposed run follows: September 5—Newark, New Brunswick and Trenton, N. J.; Philadelphia, Pa.; September 6—Philadelphia, Ancora and Atlantic City, N. J.; September 7—Atlantic City, Trenton and Brunswick; finish at Newark at 5 P. M.; total, 300 miles.

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RECENT DEVELOPMENTS in ACCESSORIES

Simple Form of Headlight Dimmer.

A headlight dimmer of the shutter type that is easily operated by a handle within easy reach of the driver, is manufactured by the Chicago Dimmer Co., Chicago, and is sold for $7.50 list. The dimmer consists of a shutter of leaves of translucent material, the device being attached to the headlight inside the lens. Attachment is made by removing the door from the reflector, attaching the dimmer back of the lens and replacing the lamp parts. The light, when the dimmer is in use, is diffused but sufficiently bright for driving purposes in city streets. The device has been approved by the Board of Motor Headlight Inspection, Chicago.

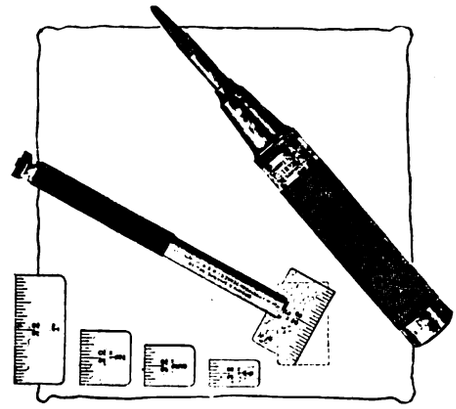
Steel Rules for Awkward Places.

Obtaining a measurement often is a matter of considerable difficulty because of the restricted space and the impossibility of getting an ordinary rule or scale in position. To meet such emergencies, the Brown & Sharpe Mfg. Co., Providence, R. I., has brought out a set of short steel rules which are placed for use in a metal handle, as shown in the accompanying illustration. The set includes 5 rules, the shortest ¼ inch and the longest 1 inch, and the handle.

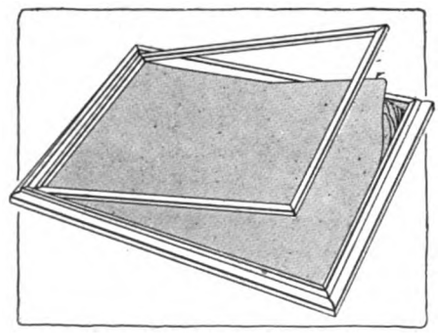
The rules are held in a split chuck at the end of the handle and may be set at any angle; the chuck is controlled by the little knurled nut at the opposite end of the handle. The rules are of tempered steel, graduated on both sides, 32nds on one side and 64ths on the other. They may also be had graduated in millimeters on one side and half-millimeters on the other. The list price of the complete set is $1.50, either style of graduation. The holder or any of the rules may be purchased separately; the holder costs 50 cents and the rules 20 cents each.

Self-acting Center Punch.

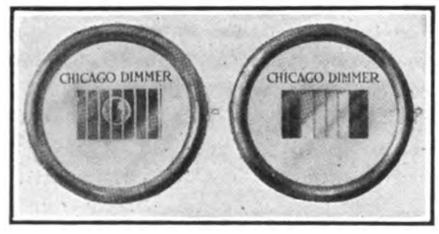
When it is necessary to do very accurate work with a center punch, the operation may be considerably facilitated by the use of an automatic tool such as the one shown in the accompanying illustration; the tool is made by the Brown & Sharpe Mfg. Co., Providence, R. I. It consists of a center punch in a holder which encloses a spring-operated hammer mechanism. When the point of the tool is placed on the spot that is to be marked the handle is pressed downward, which releases the mechanism and causes a blow to be struck on the head of the punch. The tool is particularly useful if only one hand can be used, or if a considerable amount of work is being done, in which case it saves much time. In laying-out, where the lines are indicated by rows of small "center-pops," the tool is a time saver and permits the most accurate work.



LEFT, BROWN & SHARPE RULES AND HOLDER. RIGHT, AUTOMATIC CENTER PUNCH



F. & H. DRIP PAN AND PAD



CHICAGO HEADLIGHT DIMMER

The tool is made in two styles; one having a fixed hammer-stroke and the other having an adjustable stroke so that the depth of the mark can be controlled. The non-adjustable type is made in four sizes, varying from 4⅛ inches long, list price $1.25, to 11¾ inches long, list price $25, the latter being, of course, for extremely heavy work. The adjustable-stroke type is made in one size, 5¼ inches long; price, $2.

Drip Pan Easily Kept Clean.

A drip pan under a car keeps the floor clean, and by the use of the F. & H. device, shown in the accompanying illustration and manufactured by the Foss-Hughes Co., Philadelphia, it is a comparatively simple matter to keep the drip pan itself looking clean and presentable. The F. & H. pan consists of a wood frame carrying a number of sheets of a special oiled paper. When the paper becomes oily and dirty it is pulled off just as a sheet of paper is taken off a pad, leaving a clean, new surface without the usual laborious and unpleasant process of cleaning the pan. The list price of the device is $5.

Literature Received.

The Merchants' Association of New York—Year Book, 1914.

Proceedings of the Tenth Annual Convention of the American Road Builders' Association.

Whitwood Corporation, Weedsport, N. Y.—Truck catalog.

Dahlstrom Metallic Door Co., Jamestown, N. Y.—Catalog of shapes and mouldings for motor cars.

Sprague Electric Works of General Electric Co., New York, N. Y.—Folder, Overhead system that reduces factory costs (illustrating overhead electric crane in Ford plant).

Heinze Electric Co., Lowell, Mass.—Catalogs of ignition apparatus and special triple system for two-cylinder and four-cylinder opposed motor.

Firestone Tire & Rubber Co., Akron, O.—Catalog of cycle tires, transparency showing factory; hanger illustrating automobile tire.

Mitchell-Lewis Motor Co., Racine, Wis.—1914 Mitchell instruction book.

Link-Belt Co., Chicago, Ill.—Link-Belt silent chain data book.

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In Salesroom and Garage

The I. C. Cooper Co. has opened a new branch at 219-221 W. Vermont street, Indianapolis, Ind., with G. M. Gunderson as manager, who has been affiliated with the company since its organization four years ago. The concern has the exclusive distribution for Racine tires in Indiana and for Motz tires for electrics. In addition a complete line of rubber goods and motor car accessories are carried.

The Central Garage, Jefferson avenue and Shelby street, Detroit, Mich., opened for business July 1. The structure is a three-story building, 80 x 200 feet, has accommodations for 250 cars and will be open day and night. One floor will be devoted to the care of commercial cars, another to pleasure vehicles and the third will be used for general repair and wash ing work.

Indiana Electric Service Co. is the style of a new concern launched at 421 N. Capitol avenue, Indianapolis, Ind. W. S. Harrah and F. Shull, the organizers of the company, will specialize in expert repair service of electric equipment on motor cars, including testing and repairing magnetos, coils, starting motors, lighting generators and storage batteries.

Walter Howard and Simon J. Kohl, of Waterloo, Ind., who previously were connected with the Auburn Automobile Co., Auburn, Ind., have formed a partnership and will erect a cement garage, in which they will carry on a repair- and machine-shop business.

The Cartier Auto & Garage Co. has moved into its new garage and salesroom at Ludington avenue and Charles street, Ludington, Mich. The firm represents the Hupmobile, Jackson, Pullman and Ford cars and stocks a full line of supplies and accessories.

The Boyd Tire & Supply Co., Jefferson avenue and 11th street, Toledo, O., is ready for business with a complete line of motor car accessories, tires and mechanical rubber goods. The concern is general distributer for Republic tires.

To handle Overland cars in Northeastern Michigan, and carry a full line of motor car supplies and accessories, the Simons Sales Co. has been organized at Saginaw. Headquarters will be established at 704 Genesee avenue.

Thompson Motor Sales Co. is the new style of the business formerly conducted as the V. B. Motor Sales Co. at Youngstown, O. In addition to the Maxwell line, Manager Frank Thompson has secured the Premier agency.

To represent the Mitchell car, formerly handled by the Jackson Auto Co., Davenport, Ia., F. C. Wagnor and Joe Zeman, the latter formerly a Mitchell agent, have formed a partnership and will locate at 310 Main street.

W. G. Warl and J. B. Walker have purchased the Bickart Bros. Garage at 19th street and 4th avenue, Minneapolis, Minn. It will be operated under the name Auto Inn and repair work will be a feature of the business.

The Chalmers-Syracuse Co., Syracuse, N. Y., has leased part of the building on S. Clinton street to the Fuller-Ashley Co., who will open a service station in connection with its garage business on Taylor street.

Milwaukee, Wis., has a new garage at 319 Farwell avenue. The proprietor is W. Schlueter, formerly instructor at the Northwest Motor Institute and at one time connected with the Creek Motor Sales Co.

A brick and steel, modern, fireproof garage, to cost $12,000, is to be erected at Manitowoc, Wis. The structure will be 50 x 120 feet and will contain a thoroughly equipped repair shop.

In addition to their motor car accessory store on W. Western avenue, Muskegon, Mich., Bennett Bros. & Koelbel have opened a garage and vulcanizing plant on W. Clay street.

E. L. Sprague and W. O. Rich have started in the motor car and garage business at 935 Quincy street, Scranton, Pa. They have the agency for Krit cars.

Pope Garage is the style of a thoroughly modern new garage just completed at 92 East avenue, Pawtucket, R. I. James A. Welch is the owner and proprietor.

The Livingston Garage has taken over the Bayonne Garage & Equipment Co., Boulevard and 30th street, Bayonne, N. J. The Hupmobile agency has been secured.

W. J. Burns and Bert Peterson, Pendleton, Ore., have purchased the garage business of the City Motor Co. and the vulcanizing plant of the Pendleton Auto Co.

Omar Farrell has obtained the agency for the Oldsmobile in Toledo, O., and has opened salesrooms with the City Auto Exchange, 818 Jefferson avenue.

Harry Pitt, Roseville, N. J., has purchased the Park Garage. The structure will be remodeled and a full line of motor accessories will be carried.

The Dakota Rubber Co., Devil's Lake, N. D., has been consolidated with the Cycle Supply Co. and will be operated under the style Fosberg & Maher.

The Frank P. Oswald Co. has succeeded to the motor car supply business of the Oswald-Hess Co., at 21 Campau avenue, Grand Rapids, Mich.

The H. W. Nichoalds Co., parts and accessories dealer, 22 Grand avenue, Detroit, Mich., has opened a branch at 250 E. Jefferson avenue.

Having secured the agency for the Saxon car, Sidman Bros. have leased the Anaheim Garage, South Los Angeles street, Anaheim, Cal.

A $50,000 one-story modern garage is to be erected at 4805 N. Broad street, Philadelphia, Pa. Morris Gibb will be the proprietor.

The Los Angeles Motorcycle Co., 843 S. Spring street, Los Angeles, Cal., has secured the agency for the Trumbull cyclecar.

To handle tires and supplies in Washington, D. C., Sylvester & Livingston have opened a store at 1261 14th street.

The Petry Express Co. has let contract for the erection of a $12,000 garage at 320 E. State street, Trenton, N. J.

Frank North and Robert Walter are the proprietors of a new garage on 9th street, Lockport, Ill.

P. L. Gannon has purchased a half interest in the Griffin-Franks Auto Co., Larchwood, Ia.

Frank Devoe, Parkersburg, W. Va., has secured the local agency for Chandler cars.

C. A. Searles has opened a garage at Merton, Wis. He also will stock supplies.

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The Week's Incorporations

Adrian, Mich.—Adrian Carburetor Co.; capital $50,000; to manufacture carburetters.

Cleveland, O.—Simplex Distributing Co.; capital, $10,000. Corporators—F. S. McGowan and others.

Covington, Ky.—United States Motor Truck Co.; capital $250,000. Corporators—R. C. Stewart, B. Braimlage and M. H. McLean.

Tonawanda, N. Y.—Echo Motor Co.; capital, $10,000; to deal in motor cars. Corporators—C. S. Orton, A. Nailie and G. H. Houck.

Detroit, Mich.—Wallace Shock Absorber Co.; capital $5,000. Corporators—John E. Wallace, William J. Wallace and George C. McDonald.

South Bend, Ind.—Overland-South Bend Co.; capital $5,000; to buy and sell motor cars. Corporators—Ernest A. Bennett, Walter Stewart and James E. Kepperly.

Detroit, Mich.—Dodge Bros.; capital $5,000,000; to manufacture motor cars and parts. Corporators—John F. Dodge, Horace E. Dodge and Elford C. McMeans.

Alexandria, Va.—Palace Automobile Co.; capital $2,000 to $15,000; motor car business. Corporators—Milton S. Fairfax and John S. Goodrich, both of Alexandria.

Columbus, O.—Justus & Parker Co.; capital $15,000; to deal in motor cars. Corporators—E. E. Parker, C. E. Justus, H. M. Parker, Bernard Smith and J. A. Justus.

Lafayette, Ind.—Detroit Tractor Co.; capital $100,000; to manufacture machinery and tractors. Corporators—George J. Baker, Frank E. Baker, Cecil G. Fowler and others.

Brooklyn, N. Y.—Rutledge Garage; capital $10,000. Corporators—Blance V. Foulks and James E. Foulks, Jr., both of 1324 Dean street; Oliver N. Sarvant, 96 Rutledge street.

New York, N. Y.—Hollywood Garage Corporation; capital $30,000; motor car and garage business. Corporators—J. J. Pheelan, G. A. Grant and M. Frieder, all of New York city.

Wilmington, Del.—International Motor Wheel Co.; capital $1,000,000; to manufacture wheels for motor cars, trucks, etc. Corporators—H. E. Latter, W. J. Maloney and O. J. Reichard.

Wilkes-Barre, Pa.—Auto Supplies Sales Co.; capital $25,000; to manufacture motor cars and supplies. Corporators—Joseph W. Williams, W. H. Turrell and M. E. Dean, all of Wilkes-Barre.

New York, N. Y.—Remington Motor Sales Corporation; capital $150,000. Corporators—Philo E. Remington, 30 Church street; Carl W. Bliss and E. M. Kolstad, both of 233 Broadway.

Rochester, N. Y.—Pritchard-Lyon Motors Corporation; capital $25,000. Corporators—Curtis D. Lyon, 47 Flower City Park; Paulina Pritchard and Albert R. Pritchard, both of East avenue, Brighton.

Saginaw, Mich.—Simons Sales Co.; capital $30,000; to deal in motor cars, supplies and accessories. Corporators—G. O. Simons, Indianapolis, Ind.; H. A. Faust, Chicago, Ill.; F. O. Van Deren.

Springfield, Ill.—Davis Automobile Accessories Co.; capital $25,000; to manufacture and deal in motor car supplies, specialties, accessories, etc. Corporators—E. M. Oehlert, A. S. Kedzie and Harry Garrett.

New York, N. Y.—Universal Advertising Autocar Co.; capital $25,000. Corporators—Antonio DeGiorgio, 107 Broad street, New York city; Guilio J. Lusardi and Giuseppe Manara, both of Raritan, N. J.

Chicago, Ill.—Halleman Motor Livery Co.; capital $1,000; to manufacture, maintain, operate and deal in motor vehicles. Corporators—G. W. Jalleman, Frank J. Janowick, Harry De Coudres and Joseph Dulsen.

New York, N. Y.—Vehicle-Safeguard Instrument Co.; capital $25,000; safety devices for motor cars, etc. Corporators—Junius A. Howe, 1269 Broadway; Frieda G. Howe and Junius J. Howe, both of 707 W. 180th street.

Troy, O.—Automobile Fire Association; insuring of motor vehicles. Corporators—J. C. Fullerton, Jr., George W. Conrad, A. C. McClung, S. E. Fergus, John M. Fulkerson, George V. Schnell, W. H. Thompson, A. O. Nicol, J. E. Shinn, T. G. McKnight, Harry Gabriel and F. O. Shroyer.

Newark, N. J.—New York Noble Air Pump Co.; capital $100,000; general motor car business. Corporators—E. F. Hermann, E. A. Hermann and J. H. Hermann, all of East Orange.

Wilmington, Del.—Indestructible Tyre Co. of the United States; capital $1,000,000; to manufacture tires of all kinds. Corporators—J. McLaren, F. B. Knowlton and S. V. Dowling, all of New York city.

Recent Losses by Fire.

Dallas, Tex.—E. L. Bale's Garage; destroyed; loss $11,500.

Port Huron, Mich.—Hauser Automobile Plant; destroyed; loss $100,000.

Hampton, Ia.—Romer & Gibson; building, several cars and vulcanizing department ruined or damaged; loss $5,000.

Coming Events

* Indicates sanction by A. A. A.

July 25-26, Belgium—Royal Automobile Club of Belgium's Belgian Grand Prize 2½ and 4-liter race.

July 30, Aug. 1-3, Galveston Beach, Tex.—Galveston Automobile Club's racemeet.*

Aug. 2-9, Grenoble—Automobile Club of France's six-day motorcycle and cyclecar reliability contest in French Alps.

Aug. first fortnight, Auvergne, France—L'Auto's Coupe de L'Auto 2½-liter race.

Aug. 16, Le Mans, France—Automobile Club de la Sarthe's Coupe Internationale light car race, 1 liter, 400 maximum cylinder area and 350 to 500 kilos weight.

Aug. 17, Le Mans, France—Automobile Club de la Sarthe's Grand Prize de France for 4½-liter cars.

Aug. 21-22, Elgin, Ill.—Road races under the auspices of the Chicago Automobile Club.*

Aug. 23, Auvergne, France—Coupe de l'Auto Race.

Aug. 27, Brooklands Track, England—Annual Automobile Race.

Aug., Russia—Road race; Coupe de l'Empereur; 2,500 males.

Sept. 6-7, Brescia, Italy—Automobile Club of Italy's 4½-liter Grand Prize.

Sept. 7, Providence, R. I.—Track Racemeet under the auspices of F. E. Perkins.

Sept. 7-14, Indianapolis, Ind.—Automobile Show, Indianapolis Automobile Trade Association.

Sept. 10-15, Berlin, Germany—German 4½ liter race.

Sept. 12, Hamline, Minn.—Minnesota State Agricultural Society's track racemeet.*

Sept. 14, Milwaukee, Wis.—Track racemeet under the auspices of the State Board of Agriculture.

Sept. 18-19, Hutchinson, Kan.—Kansas City State Fair track racemeet.

Sept. 26, Brooklands Track, England—Annual Automobile Race.

Sept. 26-Oct. 6, Berlin, Germany—Annual show.

Oct. 2-3, Oklahoma City, Okla.—Oklahoma City State Fair's track racemeet.

Oct. 2-3, Trenton, N. J.—Interstate Fair's track racemeet.

Oct. 7-17, New York City—Electric Vehicle Show.

Oct. 9, Chicago, Ill.—Speedway races.

Oct. 9-Nov. 2—S. A. E. European Trip.

Oct. 16-26, Paris, France—Annual salon.

Oct. 17-24, Pittsburgh, Pa.—Automobile Show, Auto Dealers Association, Inc.

Oct. 18-31, Milwaukee, Wis.—Convention, Northwestern Road Congress Auditorium.

Oct. 19, 20, 21, Philadelphia, Pa.—Electric Vehicle Association Convention.

Oct. 19-26, Atlanta, Ga.—American Road Congress of the American Highway Association and the A. A. A.

Nov. —, El Paso, Tex.—Phoenix road races.

Nov. 8-11, Shreveport, La.—Track racemeet under the auspices of the Shreveport Automobile Club.

Nov. 6-14, London, England—Olympia Show.

Nov. 15, Paris, France—Kerosene motor competition.

March, 1915, Brussels, Belgium—National Union of Automobile Manufacturers.

July 18-19, Seattle, Wash.—Meadows Amusement Co.'s track racemeet.*

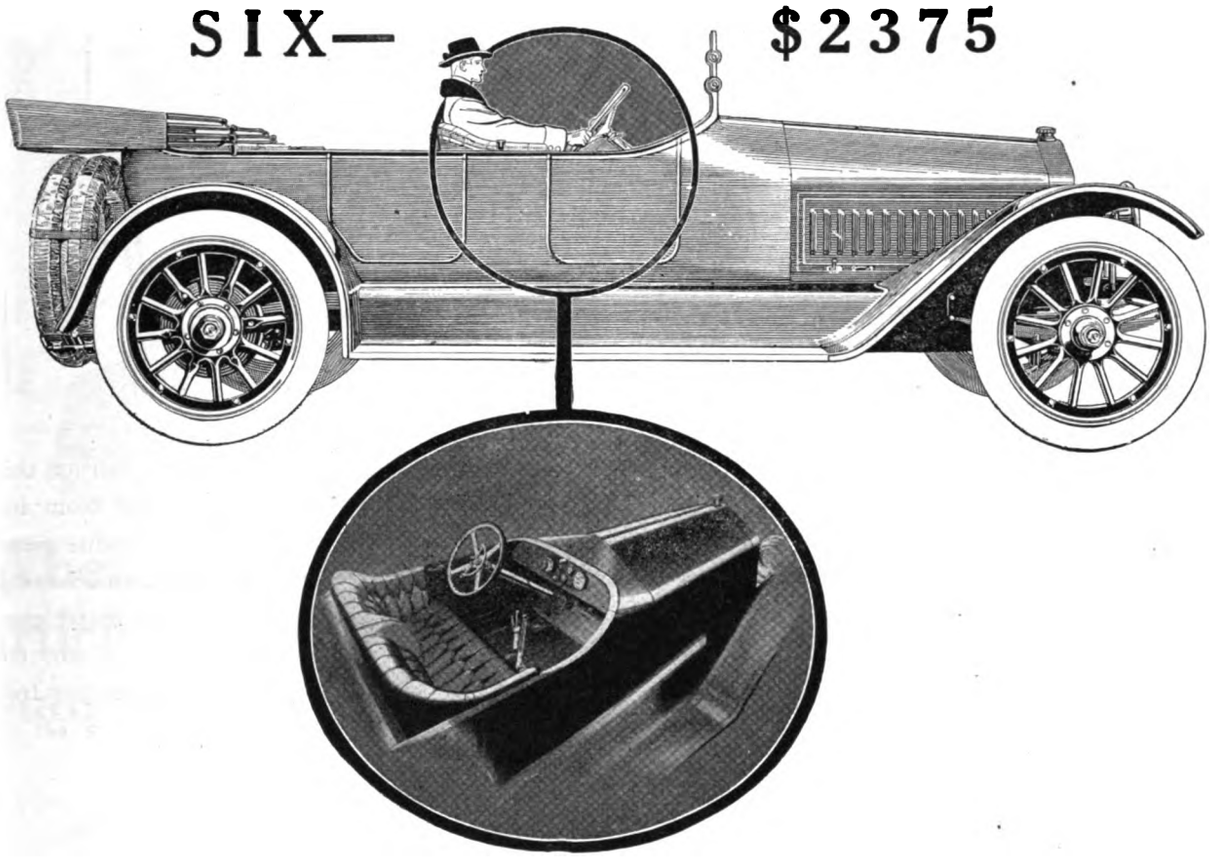
July 20, Cambridge, Ill.—Indiana Automobile Racing Association's track racemeet.

Sept. 15-16, Norfolk, Neb.—Track racemeet under auspices of N. A. Huss.

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National

SIX— $2375



Simplicity, Convenience and Ease

Have you ridden in, or driven this new National Six? Until you have you simply can't realize that our claims for its ease of riding, graceful operation, and comfort and convenience are not over estimated. If we told you all that owners say about this beautiful car we fear you would think we were exaggerating.

Note the picture in the lower circle. You see the center control, left side drive, convenient and well arranged dash equipment, access to both front doors, and smart sloping lines to cowl and hood.

When we say, "You don't have to raise the hood," we mean that with a National car you get mechanical confidence; we mean, that our fourteen years' manufacturing success warrant your putting faith in our engineering achievements. We put the right material in the correct place; we give you performance instead of mere specifications; we give you results and freedom from having to go over the car with a "fine tooth comb" to make sure there are no mechanical mistakes in it. We say that with a National you get 100% pleasure and service, because of the fact that your car is reliable and does not cause you worry about its operating mechanism.

The driver of a National does not have to worry about what is taking place beneath the hood or under the seat. His attention is required no farther than what you can see in the picture in the circle above; the wheel, levers and instrument board. The rest of the car operates with the driver's unconsciousness, because the National company built and guarantees it.

Five models of famous National 40 cars, $2750 to $3400

Write Us for Illustrated catalog

National Motor Vehicle Co., Indianapolis, Indiana

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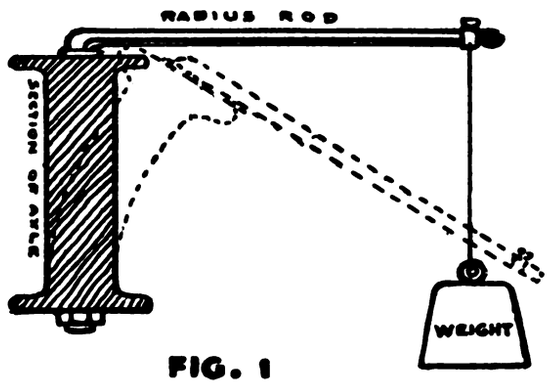


FIG. 1

These illustrations represent an I beam axle cross section with radius rod attachment at the top. In Fig. 2 a truss rod has been added, fastened to the radius rod and to the bottom of the axle.

If a certain weight be applied as shown in Figure 1, the radius rod will bend as shown by dotted lines or break.

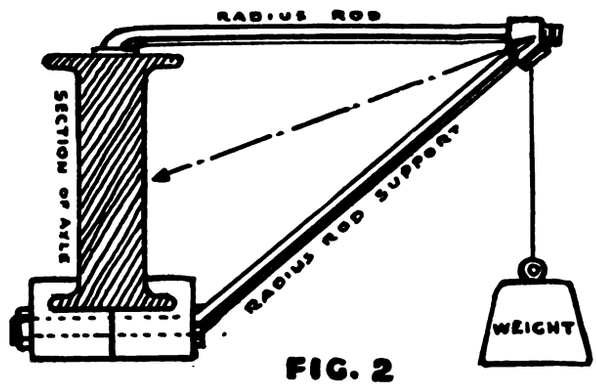
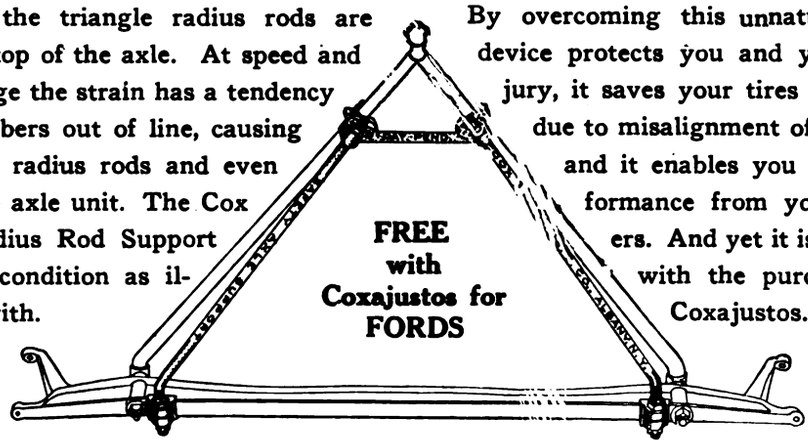


FIG. 2

But anybody can see clearly that the same weight attached in Figure 2 would have positively no effect on the rod or the axle. This roughly illustrates and explains the reason for the Cox Axle and Radius rod support, as illustrated below, and its adaption to the Ford car.

In Ford cars the triangle radius rods are applied at the top of the axle. At speed and under road usage the strain has a tendency to tip the members out of line, causing bending of the radius rods and even breakage in the axle unit. The Cox Axle and Radius Rod Support overcomes this condition as illustrated herewith.



FREE with Coxajustos for FORDS

By overcoming this unnatural condition this device protects you and your car from injury, it saves your tires from undue wear due to misalignment of the front wheels and it enables you to get better performance from your shock absorbers. And yet it is given to you free with the purchase of a set of Coxajustos.



Coxajustos admit no equal. In the first place there is no better shock absorber made. Combined with this fact is the further plus value—that Coxajustos can be easily adjusted. No matter how uneven a load you are carrying in your car, a turn of the wrist on the tops of the shock absorbers overcomes such unevenness and makes your car ride level. Also they can be adjusted to accommodate varying loads.

And now to add still further to their value, with Coxajustos we give away absolutely free a Cox Axle and Radius Rod Support with every set at the same price of $20.00 for the four absorbers. Sold under an absolute guarantee of satisfaction.

If your dealer won't furnish you a Cox Axle and Radius Rod Support free with a set of Coxajustos, write us—we will.



Cox Brass Mfg. Co.

Dept. O., Albany, N. Y.

1777 Broadway
New York City

870 Woodward Ave.
Detroit, Mich.

899 Boylston St.
Boston, Mass.

2637 Michigan Ave.
Chicago, Ill.

1216 Van Ness Ave.
San Francisco, Cal.

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Your Mind Is Not Easily Changed

When you have had good service from an article—even if the price *was* slightly higher than the *imitation*.

THE WILLARD LBA BATTERY

The LBA Battery

TRADE MARK REGISTERED

THE WILLARD LBA BATTERY

Costs you a little more than the *imitation*
But when you have it
You KNOW you have full value

Write us for full information

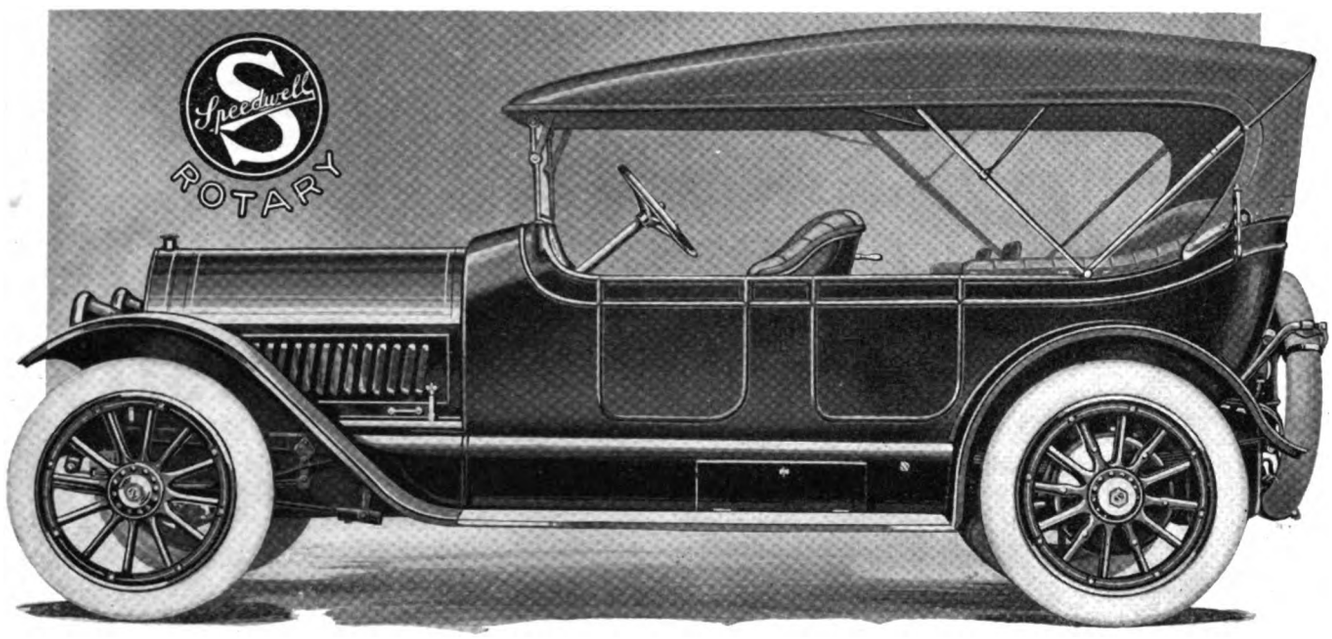
WILLARD STORAGE BATTERY CO.
Cleveland, Ohio

New York Branch: 228-230 W. 58th St.
Chicago Branch: 2241 Michigan Ave.
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San Francisco Branch: 821 Monadnock Bldg.
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SERVICE STATIONS IN ALL PRINCIPAL CITIES IN THE UNITED STATES, CANADA AND MEXICO

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The New Speedwell Rotary Six

Series "I"

Is Ready

Series "I"

Speedwell Rotary Sixes

Rotary valve six cylinder motor—4⅛ x 5¼ in.

135-in. wheelbase.

36 x 4½ in. tires on 4 and 5 passenger models.

37 x 5 in. tires on 6 and 7 passenger models.

One chassis for all models completely equipped.

4 and 5 Pass. Touring $2850
6 and 7 Pass. Touring $2950

IN this new Rotary Valve Motored Speedwell we have ***bettered*** the past season's Speedwell Rotary Six—a car that was the real automobile achievement of the present motor era.

Among its changes and refinements in design and equipment we mention—

Westinghouse System of Starting Lighting and Ignition

New Body with Wider Seats in Tonneau

Instrument Board under Cowl instead of on floor board

Kellogg Power Tire Pump

Golde-Patent One-Man Top

Warner Speedometer

Klaxet Horn

Numerous Motor Refinements

Send for advance catalog of this car, and if a dealer, consult us upon agency representation in unoccupied territory.

Address Department A **THE SPEEDWELL MOTOR CAR COMPANY, Dayton, Ohio**

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ANNOUNCEMENT

TO MANUFACTURERS, THE TRADE, AND USERS

New Bosch Products

IT gives us pleasure to announce that the various new Bosch Electrical Products, including the Bosch Lighting and Starting Systems, which have been on the market for some time, are now ready for quantity deliveries.

Complete Range of Lighting and Starting Motors

Recognizing the varied requirements in these new fields, we have endeavored to meet them fully, by designing and producing a complete range of lighting dynamos and starting motors, as well as all necessary equipment, such as lamps, regulators, etc.

Perfect Light Distribution and Regulation

In the "Bosch Light" system, careful study has been given to the perfect regulation and distribution of the light itself by specially designed regulators and lamp equipment.

Bosch Starters to meet all Requirements

In regard to the "Bosch Starters," both requirements, namely, the over-running clutch and the fly wheel engagement systems can be supplied. The first named is a highly perfected "Bosch Starter," while for the latter, the "Bosch-Rushmore" system is employed.

Rushmore System Most Efficient for Fly-wheel Engagement Requirements

Thorough research convinced us that the famous Rushmore principle of electrical starting was the most efficient and practical system for fly wheel engagement.

Rushmore Works taken over

The Rushmore Dynamo Works of Plainfield, New Jersey, have therefore been taken over by us, so that in conjunction with our factory in Springfield, Massachusetts, we are able to fill promptly, immediate quantity specifications for the "Bosch Light" and "Bosch Starters."

Bosch Service for all Rushmore Users

In conclusion, we desire to emphasize that all users of the present Rushmore products will not only continue to receive these products as heretofore, but will have the additional advantage of the service rendered by the extensive Bosch Distribution and Supply System.

BOSCH MAGNETO COMPANY

224 WEST 46th STREET, NEW YORK

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A Bigger Goodyear Tire for Less Money —and Why

Get the full import of this advertisement. It affects you vitally. It tells of a condition in tire selling which perhaps you have not yet fully realized.

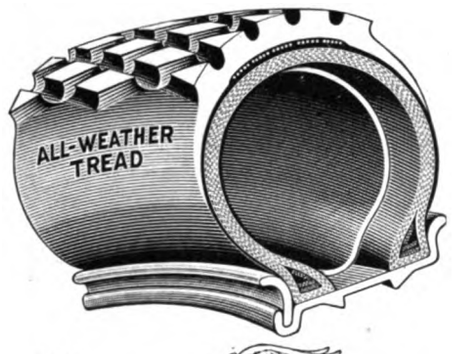
It tells why LARGER SIZED Goodyear Tires are sold for LESS MONEY than SMALLER SIZES of other makes.

More than 16 other manufacturers have established list prices higher than Goodyears. Many of these prices are so high that the price of a competitor's 36 x 4½ is even greater than that of a **37 x 5** Goodyear.

Please get that. A **bigger** Goodyear tire for **less** money!

No wonder discounts are offered off these fictitious list prices. These "cuts" are misleading to both you and the customer. You have to quote the discount to get the price down to anywhere near where it should be.

And even then the net result is still higher than the price of **a Goodyear tire.** That's interesting. Isn't it?



GOODYEAR
AKRON, OHIO

No-Rim-Cut Tires

With All-Weather Treads or Smooth

Figure It Out

Do this. Next time a customer mentions "discount" on competitive tires, sit down and figure out with him just what the "discount" really means. Then show him the Goodyear price on the same sized tire. The figures will speak for themselves. Invariably a special discount on another tire still leaves more to be paid by the customer than the full retail price of a Goodyear.

This means that you don't have to offer discounts or cut prices on Goodyears, because Goodyears are already figured at "rock bottom."

This is due to the Goodyear production of up to 10,000 tires a day, exclusive tire-making machines of our own invention, and a host of natural economies resulting from matchless output.

So, Goodyear can make a low price—and does. And doesn't "water" prices to allow for false "discounts" to consumers under the guise of cut rates.

Here's an example of how these "discounts" work out. 20% off $52 leaves $41.60. And some 36 x 4½ tires are "listed" at above $50. But Goodyear 36 x 4½ All-Weather Treads sell at $40.95. Read that again. Special discounts don't necessarily mean any advantage to the buyer. Rather, they tend to kill confidence.

Send For This Price Poster

On request we'll send you a Goodyear price poster which shows in black and white, Goodyear retail prices. You should have the poster. When you get it, hang it up. Place it in a conspicuous place. Let your customers see for themselves these prices which will forever answer and settle all arguments as to which costs them less—a "list-inflated discount" tire of another make, or a rock-bottom-priced Goodyear. Write to desk 10.

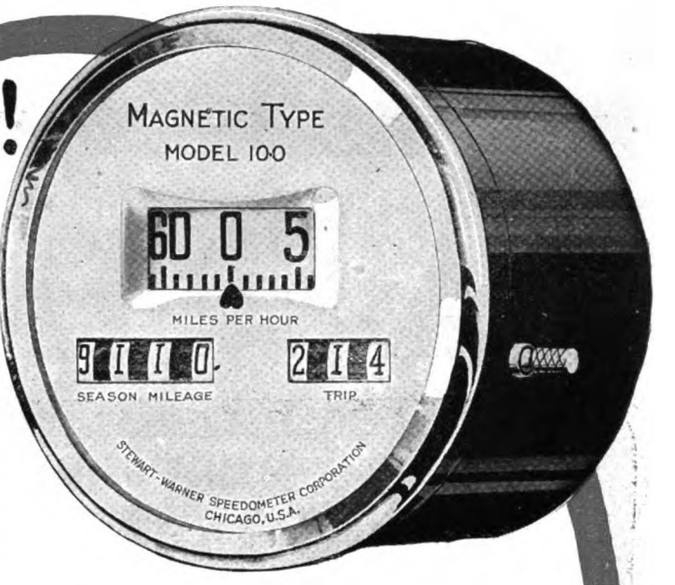
The Goodyear Tire & Rubber Company, Akron, Ohio

Toronto, Canada **London, England** **Mexico City, Mexico**

Dealers Everywhere. Branches and Agencies in 103 Principal Cities
Write us on Anything You Want in Rubber

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Ford Dealers! Get in Quickly on This



Sixty days ago we announced a Stewart Magnetic Speedometer for Ford cars. It was a stampede from the start—orders came in by the thousand, taxing even our great facilities,—and our plants can produce 3,000 speedometers per day at that.

Once this Stewart Magnetic Speedometer and Special Equipment for Ford cars was announced, Ford owners refused to buy the unreliable and unsatisfactory centrifugal instrument———They want the Stewart Speedometer—they want the Magnetic Principle—they want Accuracy—they actually want good looks. Dealers everywhere are calling for these speedometers faster than we can deliver them—they are anxious to realize on this money-making speedometer proposition. They can see big money to be made in getting a Stewart Magnetic Speedometer on every Ford car in their territory. Every Ford owner wants a Speedometer—a Stewart. If you don't sell a Stewart Speedometer to every Ford owner in your territory some one else will very shortly.

The New Stewart Speedometer

is the genuine article — a real magnetic type "Stewart", with 60 mile rotating speed dial, 10,000 mile Season Odometer, 100 mile Trip Odometer with device for resetting to any mile or tenth, jeweled bearings, case finished in deep jet lacquer to match the Ford car. It sells fast, because with all its quality it retails, complete and is fully guaranteed, at only **$12**

It sells easily—no argument—because we stand back of you with a 30 day free trial offer. Get after this business now. Write us today for our Dealers' Proposition.

Stewart-Warner Speedometer Corp'n.

17 Branches. Service Stations in all cities and large towns.

Executive Offices:
1949 Diversey Boulevard, Chicago
Factories:
Chicago and Beloit, Wisc.

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Herff-Brooks

A 50 Horse Power

The HERFF-BROOKS SIX is the smashing, sensational value for 1915. It beggars compe-

Striking Selling Features

Price, $1375
Six cylinders, 4 x 4½ in.
50 horsepower
Seven bearing crankshaft
Highest grade Bosch high tension magneto (D U system)
Electric starting, electric lighting—Apple system
One-man silk mohair top
Honeycomb radiator
Stromberg carburetor
Timken and New Departure bearings
18-in. Steering Wheel, folding down type for easy exit from car
Detachable, demountable rims, with extra rim
34 x 4 Goodyear No-Rim-Cut tires
Headlight dimmers
Tire irons, foot rest, robe rail, Stewart-Warner speedometer
Auxiliary seat in tonneau, clear vision, ventilating windshield and complete equipment
Linoleum covered running boards
Wheelbase 124 in.
5 Passenger Touring Car and 2 Passenger Roadster bodies

The Car is Good

NO man can read the Herff-Brooks Six specifications and not realize that this car is a superb machine. There never has been a time before now when so complete and splendid a car could be bought for $1375.

Let this thought go deep. It is, we believe, the most valuable announcement ever made to consumers and dealers.

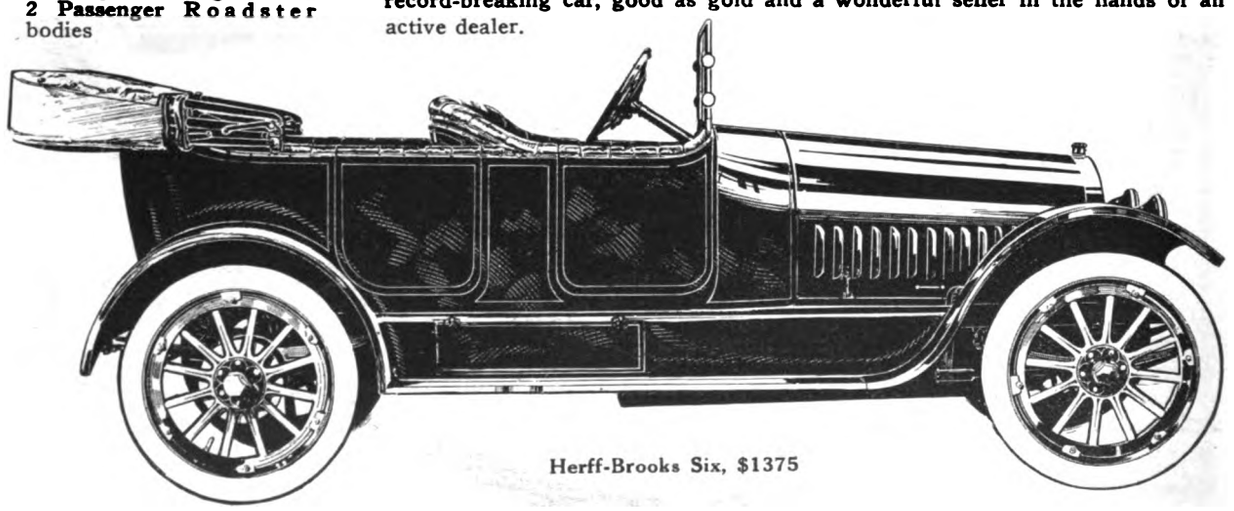
It means a magnificent car to sell and a jewel to buy.

The Herff-Brooks is manufactured as completely as any car built, in one immense factory. This plant has for years been building parts for the leaders of the automobile industry. It makes everything, from screws to motors. The huge part business still goes on, so that our expenses are tremendously reduced. Our overhead cost is far below our competitors, our organization is much less expensive because it was brought together long ago. We enjoy the unprecedented advantage of producing Herff-Brooks cars in a perfectly equipped, well organized, strikingly efficient plant, whose one business for years has been the quantity production of high-grade automobile parts.

Here is an offer few manufacturers would dare make, but we do it and shall be sincerely glad to have you accept it.

Come to Indianapolis at Our Expense—Now

Our car, and the plant which makes it, are exactly as we say, and we want you to see them. No dealer ever came to see us who did not recognize in our proposition something that he wanted. We will pay the transportation expenses of any dealer who comes to see us and, finding that the facts are as we state them, makes a dealer's agreement with us. Don't hesitate. This is a record-breaking car, good as gold and a wonderful seller in the hands of an active dealer.



Herff-Brooks Six, $1375

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Herff-Brooks

Six for $1375

tition and sells at sight, because men can see that it is good and the price is record-breaking.

The Price is Right

THE price of the Herff-Brooks Six puts a dealer where every man has always wanted to be—away below competition.

People buy on price, all things considered, and when you reflect that the Herff-Brooks surpasses in appearance and performance anything within several hundred dollars of its price, you can understand what a tremendous appeal the price makes.

The price is right, and the discounts are right too. You will make good money on every car you sell.

Think for a minute what the price means.

Is there a single prospect in your territory who may have his mind on a Six at $1550, $1650, $1750 or higher, who will not listen eagerly if you show him that you can give him more, and at $1375. No! the price argument is a clincher, and never more than this year.

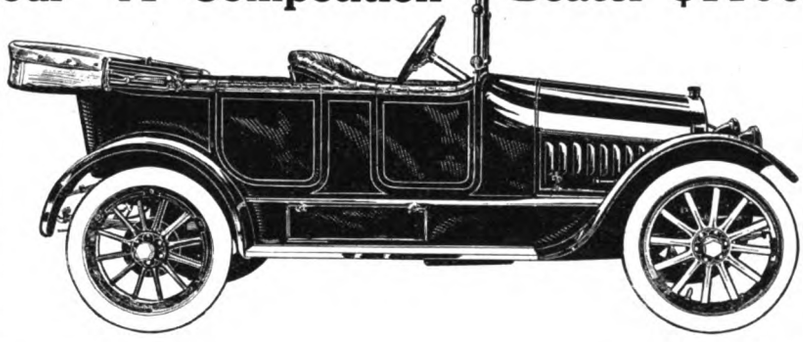
The Herff-Brooks line, both the $1375 Six and the $1100 Four, is a competition-beating line. It offers a wonderful opportunity to the dealer who has seen enough business go to his lower-priced competitors' doors, and who would like to know how it feels to handle a car as good or better than his competitors', at a much lower price.

Think it over. This is business. It is also human nature. And the more you ponder on this matter, the more clearly you will see what we have to give you.

The Herff-Brooks Four—A Competition Beater $1100

Features

Price $1100
40 Horsepower
4 cylinders, 4½ x 5 in.
Five bearing crankshaft
Highest grade Bosch high tension magneto (D U system)
One-man silk mohair top
Honeycomb radiator
Apple Electric Starting and lighting
Timken and New Departure bearings
Stromberg carburetor
18-in. Steering wheel, folding down type for easy exit from car
Wheelbase 118 in.
34 x 4 Goodyear No Rim-Cut tires
Detachable, demountable rims and extra rims
Headlight dimmers
Complete equipment. Tire irons, foot rest, robe rail, auxiliary seat in tonneau, concealed tool boxes, Stewart - Warner speedometer, etc., etc.
5 Passenger Touring car and 2 passenger roadster bodies



Write for Catalog M-W

HERFF-BROOKS CORPORATION

INDIANAPOLIS, IND.

If you are a live dealer, looking for a live line, wire or write immediately, or, better still, come to Indianapolis at once. Our last year's business was a great success and we are opening up now for bigger things.

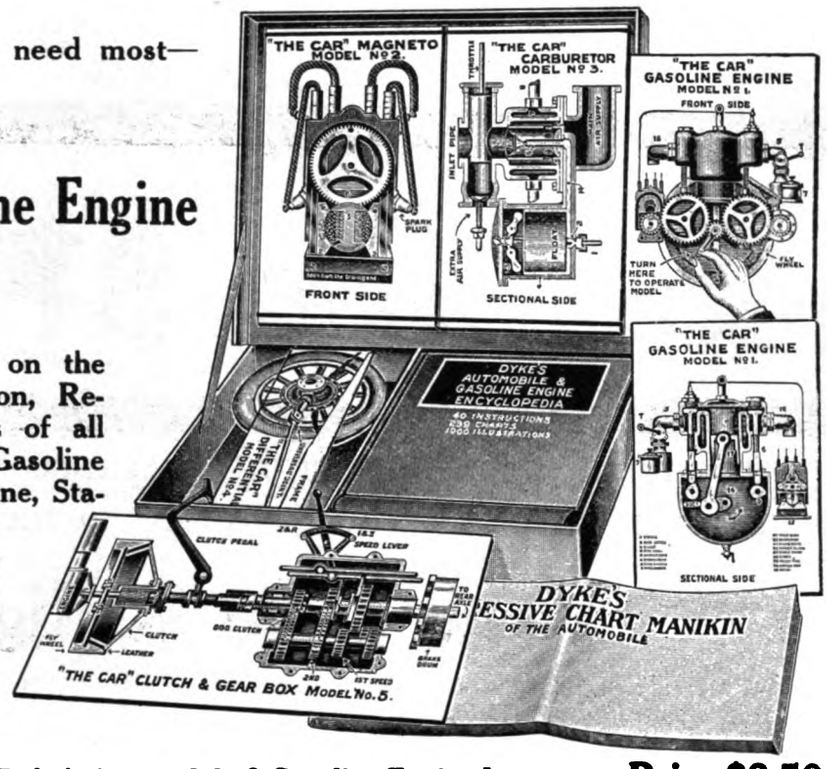
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Here it is—just the thing you need most—

Dyke's Automobile & Gasoline Engine Instructor

A Practical Instructor treating on the Principle, Construction, Operation, Repairing, Troubles and Remedies of all Automobiles and all types of Gasoline Engines: Auto, Motorcycle, Marine, Stationary and Aero.

A NEW IDEA invented by A. L. Dyke, the originator of the first automobile supply business and publisher of the first practical book on automobiles in America. Endorsed by Lord Montagu, the leading motor authority of England, and Chas. Duryea, Chas. Splitdorf and others. Simple, Thorough, Practical. Prepared for the NOVICE, but a handy guide and reference for the EXPERT.



Dyke's Automobile & Gasoline Engine Instructor. Price $8.50

DESCRIPTION

ON THE WORKING MODELS YOU GET THE ACTUAL PRACTICE, see the actual INSIDE operation and learn the principle. The Instructions then explain and illustrate the variance in construction of the different parts in general use.

With these Models you learn more than you could from the real part itself because you see the inside operation—something impossible with the real part.

THE MODELS OPERATE BY HAND, ALL MOVING PARTS MADE OF REAL METAL. There are two sides to three of the models.

ON THE No. 1 ENGINE MODEL you learn the principle, then valve operation and how to set the valves. The same applies to all other models.

THE PROGRESSIVE CHART MANIKIN EXPLAINS WITH LARGE PROGRESSIVE DRAWINGS HOW THE AUTOMOBILE IS BUILT FROM THE GROUND UP: First the springs are mounted on the axles, then the frame on the springs, then the power plant on the frame, then the transmission and drive system, and so on until the car is completed. Key numbers of parts are referred to throughout the instructions.

THE ENCYCLOPEDIA contains 560 pages, 239 Charts and over 1000 Illustrations. It is divided into forty instructions, as follows:

Assembly of the Car, Drives, Steering Springs & Brakes, Axles & Differentials, Clutches, Transmission or Change Gears, The Gasoline Engine, Engine Parts, Valve Timing, How Cylinders Fire, Two Cycle, Carburetion, Self Starters, Electric Ignition, Low Tension Coil, High Tension Coil, Wiring, Ignition, Timing, Various Ignition Systems, Low Tension Magneto, High Tension Magneto, Magneto Principle, Magneto Wiring, Magnetos Setting & Troubles, Storage Batteries, Lighting a Car, Cooling, Lubrication, Operating a Car, Rules of the Road, Care of the Car, Tires, Vulcanizing, Building a Garage & Repair Shop, Equipment, Tools, Use of Tools, Repairs & Adjustments, Digest of Troubles, Diagnosis & Remedies, Insurance, Laws, Horsepower, Tables, Measurements, Steam Car, Air Crafts, Pointers for Automobile Salesmen, Dictionary, Index.

EACH AND EVERY SUBJECT IS COVERED IN DETAIL WITH CLEAR ILLUSTRATIONS AND SIMPLE EXPLANATIONS—for instance: The Engine Subject covers all engines from 1 to 8 cylinder, explains the different valve systems and cylinders and crank shafts.

THE CARBURETION SUBJECT covers, first the principle of Carburetion, then the different constructions, and finally ends with clear detail rules for adjusting all leading carburetors.

THE ADJUSTMENT AND REPAIR INSTRUCTION is probably the most interesting. The subject of repairing begins with cleaning a car; cleaning carbon, chemically and mechanically; grinding valves; testing compression; taking up lost motion in valve stems and plungers; setting valves and timing the ignition; how to set all leading magnetos; scraping bearings; how to test for knocks and how to locate them; meshing the timing gears; fitting piston rings; carburetor repairs and adjustments; rewiring a car; ignition troubles and remedies; timer troubles and remedies; cooling troubles—how to clean and repair radiators; how to take up wear in differential; how to adjust the steering device; how to treat the clutch; lining up wheels, etc. In fact, every adjustment needed on a car is explained and fully illustrated.

THE INSTRUCTION ON SALESMANSHIP gives many pointers to the auto salesman in the way of advantages and disadvantages of different systems of ignition, carburetion, engines, etc.

THE INDEX AND THE DIGEST OF TROUBLES—With this Index the reader can find any trouble the auto is heir to, then turn to the Digest of Troubles and learn the cause and remedy, and then turn to the Repair Section and see how to repair it, or turn to the Instruction and learn the principle and construction.

VALUE OF THIS INSTRUCTOR TO YOU. It will train you to become:

(1) AN ENGINE EXPERT capable of diagnosing ignition, carburetion, valve timing, cooling troubles, and remedying them.
(2) A DIAGNOSIST—who from knowing the principle and construction of all these subjects can instantly tell the cause of any trouble and apply the remedy.
(3) A RUNNING GEAR EXPERT capable of diagnosing and remedying such troubles as differential, transmission, axles, brakes, steering wheels and axle troubles.
(4) AN AUTO MECHANICIAN who can adjust and remedy all the troubles after diagnosing—the subject of repairing in this Instructor is complete in every respect.

YOU CAN'T AFFORD TO BE WITHOUT DYKE'S AUTOMOBILE AND GASOLINE ENGINE INSTRUCTOR.
THE INSTRUCTOR CONSISTS OF:

5 Working Models
Progressive Chart Manikin
Book—Dyke's Automobile and Gasoline Engine Encyclopedia.

PRICE of the Dyke Automobile and Gasoline Engine INSTRUCTOR, as shown above, complete in a special box—$8.50. (Add 60c if wanted prepaid.)
NOTE:—The Book—Dyke's Automobile and Gasoline Engine ENCYCLOPEDIA can be purchased separately, if desired. Price—$3.00. (Add 25c if wanted prepaid.)
NOTE:—THE 5 WORKING MODELS can be purchased separately from the Instructor, but in sets of 5 only. Price for the five—$5.75. (Add 48c if wanted prepaid.)

BOOK DEPARTMENT **MOTOR WORLD** 231 West 39th St. NEW YORK CITY

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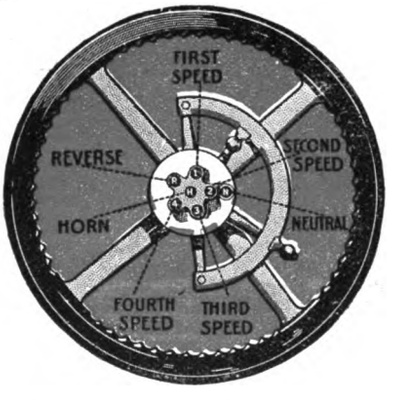


"It's Just Fun to Operate"

The new Vulcan Electric Gear Shift is so convenient, so simple, so easy to operate, that after you have once handled a car with it on, you will never go back to the old fashioned hand control lever.

Best of all, the electric gear shift has no complicated parts, no delicate mechanism;—just a simple electro-magnet operated by a push button, which performs for you the function that your hand and arm were compelled to, before.

It is the greatest improvement since the introduction of the electric starter, and even more important, because you use it oftener. It uses very little electric current. There is practically nothing to get out of order. It's as easy to take care of as an electric door bell.



You, as an owner, will, of course, want this new electric system of control on your 1915 car.

If you are a dealer, you know the ***added advantage*** which a needed electric improvement of this kind will give you, how it will influence the sale of any car which is equipped with it. If you want the electric gear shift, ***now*** is the time to signify your desire.

If you are a manufacturer, you will be interested in knowing that a number of cars have already adopted this for 1915, and many more are trying it out with the idea of incorporating it into their new designs. ***Now is the time to investigate*** the Vulcan Electric Gear Shift.

Full Particulars Upon Request

The Cutler-Hammer Mfg. Co.

The Vulcan Electric Gear Shift Dept.

MILWAUKEE, WISCONSIN

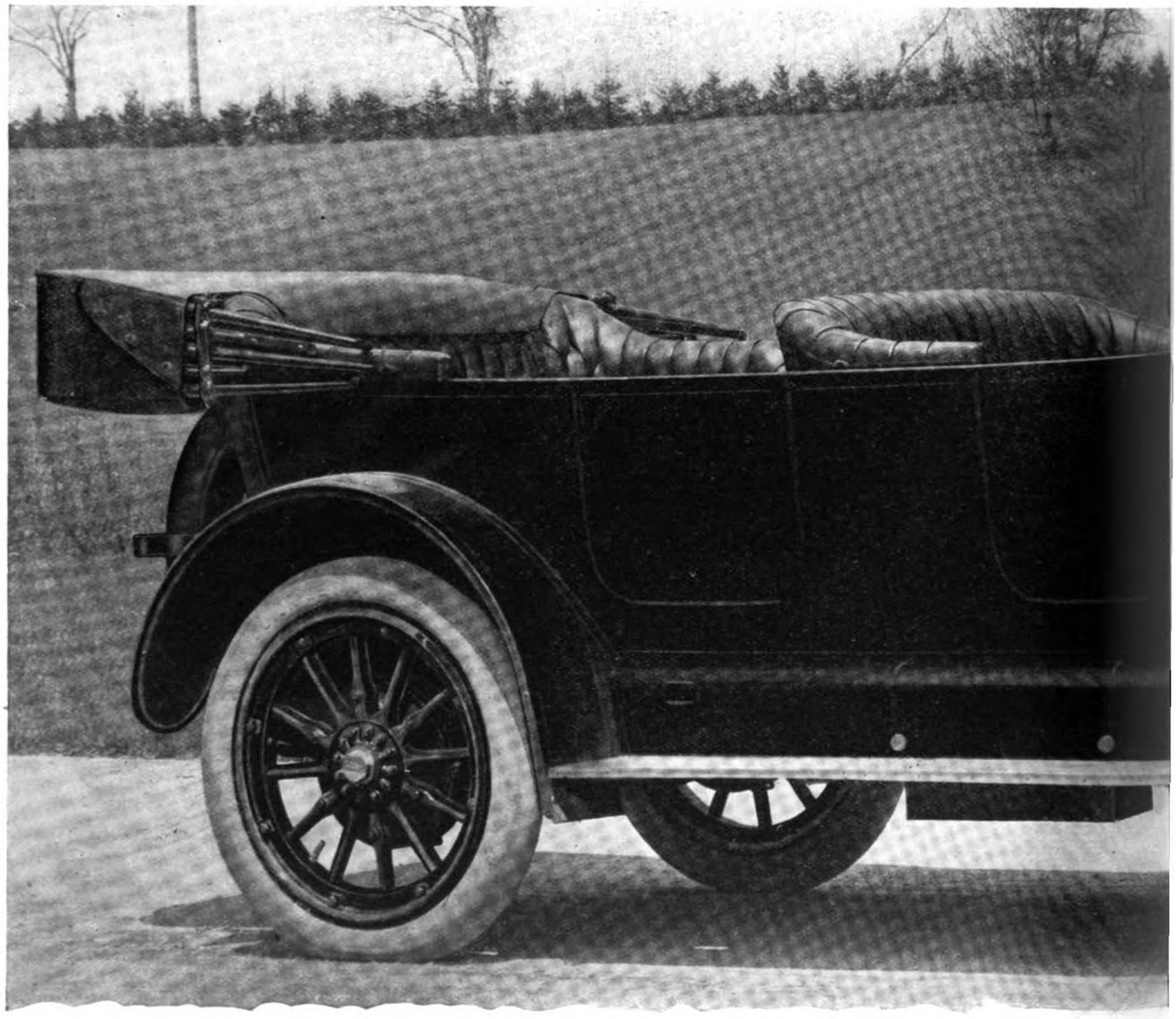
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1915 A New Series=

Mr. Dealer:

Have you ever seen a better looking car? NO! IT'S A REAL 1915 MODEL and it lists at $400 less than its predecessor. AND the same quality of specifications remain (and their are no better in any car irrespective of price).

Here is the great big buy of the season. THINK IT OVER. Then act! Attractive appear-



Premier Motor Manufacturing

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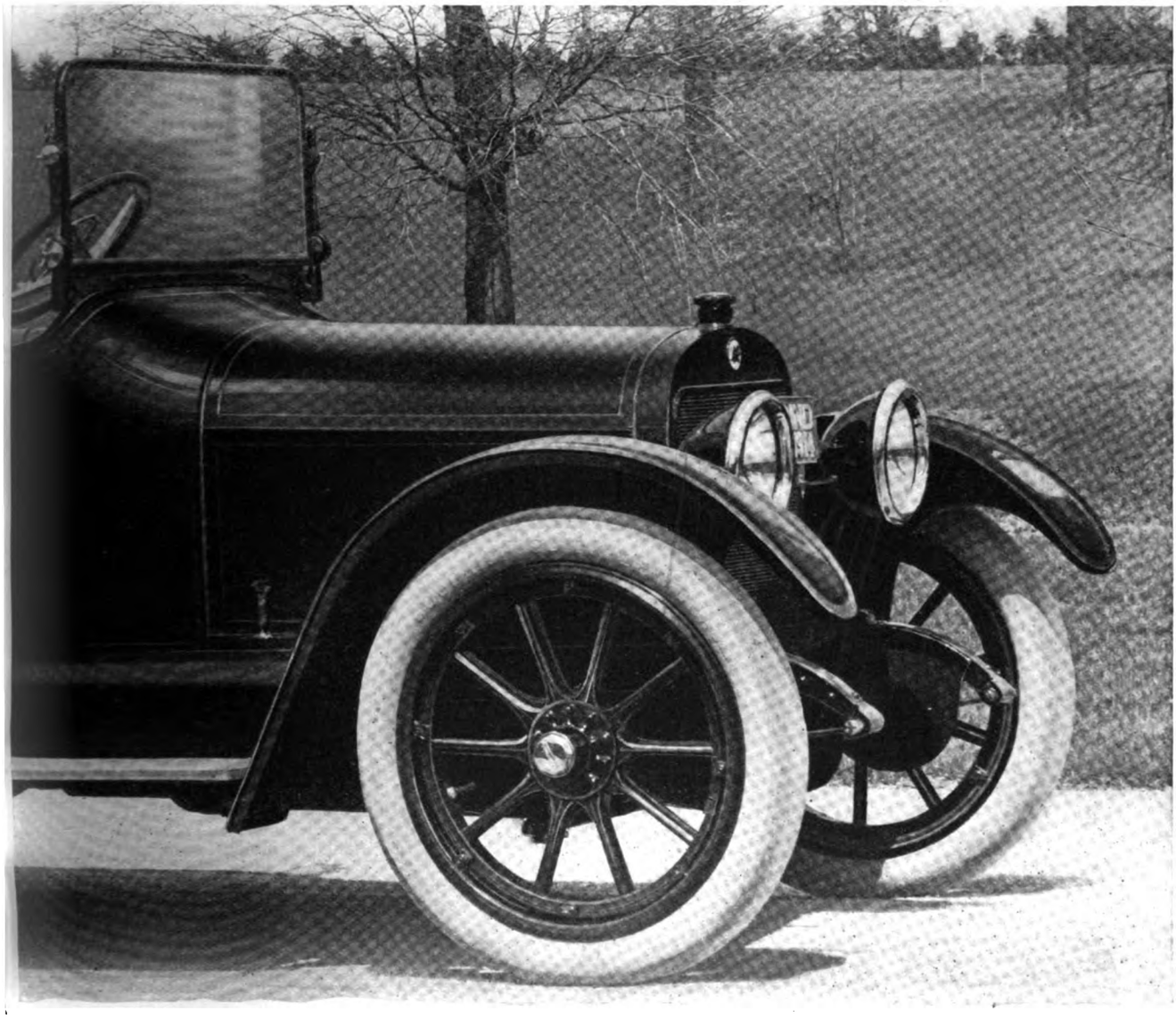
=A New Price

$1385

ance and price; sturdy construction and UP-TO-THE-MINUTE design and equipment, backed by PREMIER reputation and prestige, insures the sales advantage—the edge—to do the big early 1915 business with this Premier 6-49.

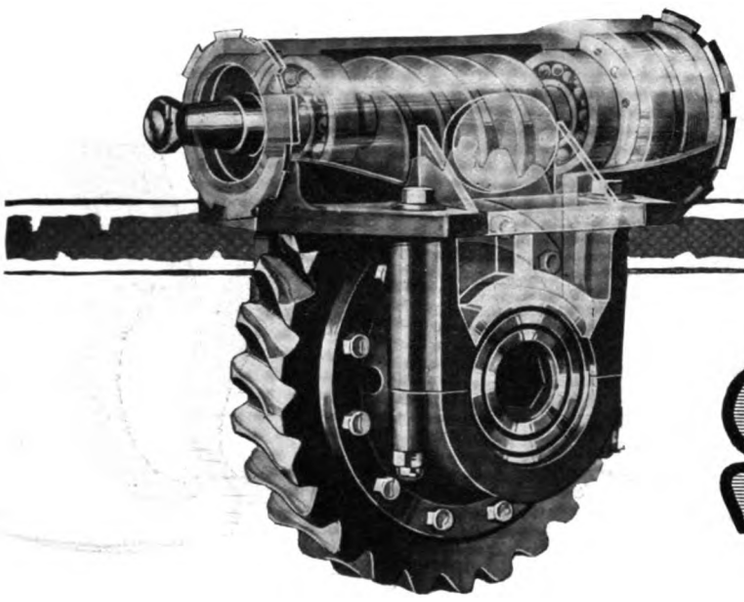
Let us hear from you or call and see this car and the factory that builds it.

Prompt Deliveries—Immediate Profits



Company, Indianapolis

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SHEL

THE point that we want to entrench most firmly in the minds of you dealers is that this educational advertising campaign which we have under way was conceived in the firm belief that the buying public today, and especially the truck buying public, has reached a point where it is analyzing carefully the claims, not only of the truck maker himself but of the parts and accessory manufacturer whose products go into that truck. That being true, beautiful display and hard pounding of generalities are not going to satisfy the discerning buyer as to the quality of the product. It is for this reason that our consumer's copy goes deeply into engineering technicalities brought out in such manner as to be easily digestable to the more non-technical buyer.

WORM GEAR AXLES

Sheldon products always have been and always will be manufactured solely on the basis of efficiency to the ultimate consumer. For this reason, we want both the ultimate consumer and you as the middle man to be thoroughly sold on both the design and construction of Sheldon Axles and their relation to the ultimate efficiency of the practice in operation.

As salesmen, you know the value of pushing those products which are going to serve and satisfy your customers best, so that it should not be necessary for us to waste a great deal of effort and time on selling logic directed to you. What we want you to do is to follow our copy carefully, that you yourself may realize fully that when you are selling a Sheldon equipped vehicle, you are placing in the hands of your customer a product, the efficiency of which is unquestioned insofar as our equipment is concerned.

In the design and construction of Worm Gear Axles the Sheldon Company has been unhampered in that it is not interested one way or another in the sale of any particular type of bearing.

SHELDON AXLES ARE BUILT SOLELY TO FURNISH THE MOST EFFICIENT SERVICE TO THE USER OF MOTOR DRIVEN VEHICLES — NOT TO SELL BEARINGS.

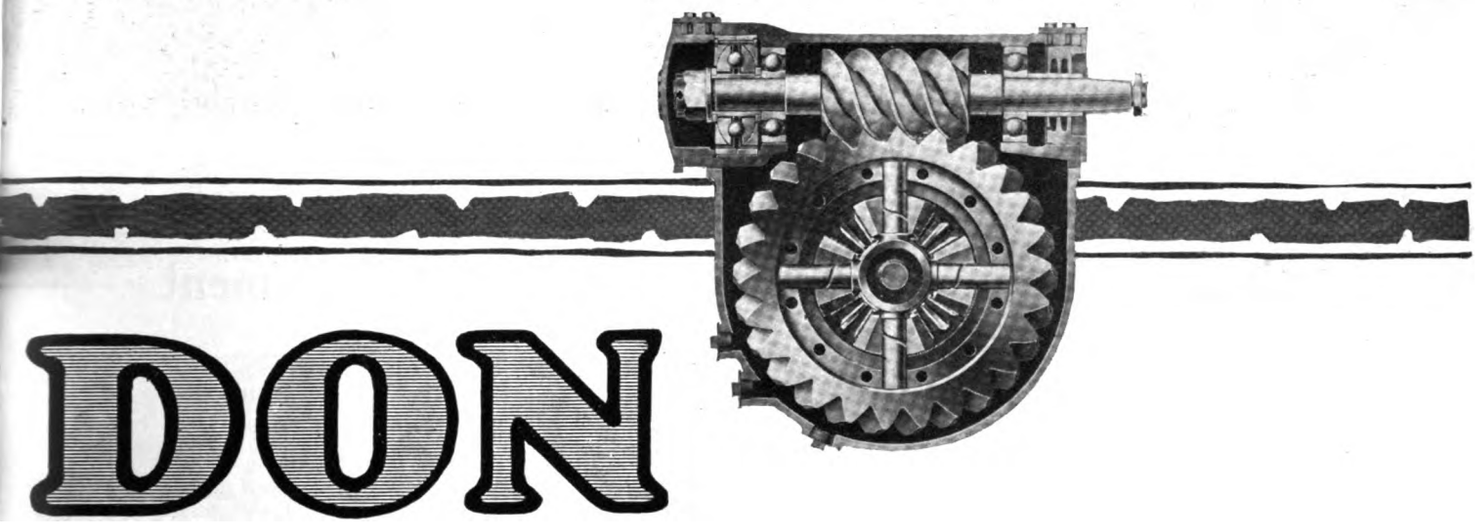
Our instructions to our engineers months and months ago were simply to design the very finest, most efficient worm gear drive axle that was known to the advanced engineering minds of the day. There were absolutely no limitations of material or cost placed upon those engineers. Their work was only to design the best, and the result of those "unlimited, unhampered" instructions is the Sheldon Axle of today, which we are willing to guarantee under absolute actual test to be the most efficient worm gear axle manufactured.

The one point upon which we are driving the hardest in this particular piece of copy, of course, is the fact that the thrust load of the worm shaft which, as you know, is the severest load in worm gear operation, is taken by a double thrust ball bearing. Every unbiased engineer will admit beyond any question that there is no substitute for thrust ball bearings in the performance of this function. It is common knowledge in the engineering fraternity—and we may safely say among many of the better educated members of the entire automobile industry—that there is no bearing which shows the efficiency of the ball bearing. Engineering Societies throughout the civilized world have demonstrated this fact without any question and it is commonly accepted practice in computation of the frictional co-efficiencies of bearings that the ball bearing frictional co-efficient is but 1/10 of 1%, whereas the roller bearing frictional co-efficient varies from about 1.25 to as high as 2.75% with the plain bearing offering from 2 to 5% of load applied.

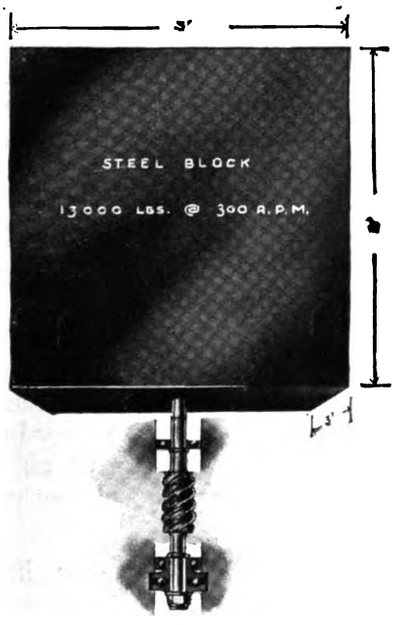
SHELDON AXLE CO.

Makers of Springs and Axles for Heavy Duty Service for More than 50 years

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DON



The illustration shown herewith indicates clearly the importance of the consideration of the thrust load in worm gear axle construction. This drawing is made to scale and typifies the thrust load carried by a worm bearing under the following conditions:

In a three ton truck using a 36 horsepower motor with a gear ratio of 11¼ to 1 on the axle and 4 to 1 on low speed in the gear box, making a total reduction of 47 to 1, it is possible to get a thrust load on the worm as great as 13,000 pounds. Or, as illustrated, equivalent to putting a dead weight of 6½ tons on the end of the worm with the worm revolving under this load at 300 R.P.M. Surely this graphic illustration emphasizes clearly the necessity of proper ball bearing construction to maintain this thrust and to eliminate the almost absolute certainty of wedging with other types of bearings.

It will be noted further that in Sheldon construction radial bearings are used to maintain the worm shaft in proper position relative to the wheel while this double thrust bearing is accepted as the only possible construction which will properly take care of the thrust along the axis of the worm and maintain its position in the forward or reverse condition.

It is our firm belief that the reason so few axles carry the factor of safety possible only in the Sheldon type of design, lies in the fact that very few manufacturers realize how much this thrust load really amounts to.

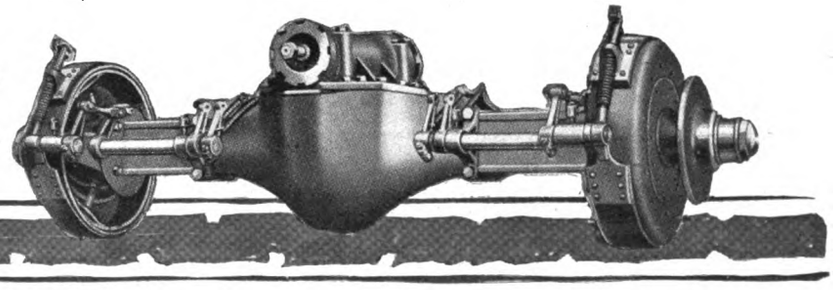
In other words, the ball bearing frictional co-efficient may run as low as 1/50 of that of the plain bearing—averaging about 1/20 of that of a roller bearing.

Without taking into consideration at all the question of permissible compactness—the question of a construction which neither requires nor admits of adjustments—the various questions of elimination of wedging under load that are properly handled in Sheldon design, in its keeping of the pressure angles parallel with the worm axes, this one question of a superior bearing efficiency alone is ample to justify the adoption of the Sheldon type over any other type.

Convinced by all foreign practice, where the worm gear has been tried and proven out, that our design is the most advanced of any, we welcome with greatest enthusiasm, every opportunity to go into the questions we have raised in your mind herewith to the absolute limit. As we said before, our only objective is the production of an axle that will give the greatest service to its purchaser, and in the production of that axle, our engineers have not been hampered by being forced to design an axle around a certain type of bearing in the manufacture of which we were interested. Efficiency only has counted.

Wilkes-Barre, Pa.

CHICAGO	SAN FRANCISCO	DETROIT
122 S. Michigan Blvd.	444 Market St.	1215 Woodward Ave.



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Men of sound judgment, of sober thought and intelligent action are never convinced by false argument

Men of this type are seekers after truth and their favorable consideration to an important purchase is only gained by the force of logic.

Facts are Facts—one cannot ordinarily obtain genuine value without paying for it. This holds true of men as well as of merchandise—and automobiles.

This law of compensation is universal —one cannot in a regular way purchase $2400 worth of anything (not even in automobiles) for $1500.

Neither can a maker of anything (even an automobile) permanently ask and receive $2400 for an article that is worth only $1500.

THE MOLINE-KNIGHT AUTOMOBILE IS PRICED $2400 FOR A SPECIAL REASON. IF IT COULD PROPERLY BE SOLD FOR LESS, THE PRICE WOULD BE LOWER.

We might ask and **receive more** than $2400 and be on a false price basis.

We find that the right automobile at the right price finds a constant, steady distribution.

We are selling our daily product as rapidly as we can turn it out.

Four to five perfect Moline-Knight cars is the daily average. The cars go to men —through dealers—who are governed by the **Rule of Reason.**

THE PRICE OF THE MOLINE-KNIGHT IS NOT ITS MOST IMPORTANT FEATURE. WE ARE NOT BUILDING CARS TO SELL AT A PRICE.

If we were building cars to fit a fixed low price we would not be building the Moline-Knight **OUR WAY.**

There is no patent on any scheme of automobile construction — there is one way to build low priced cars and another way to build Moline-Knights.

Why buy three dollar shoes?

Three dollar shoes represent the triumph of machinery in shoe-making—but there are many men who want better shoes than can be bought for three dollars — are not satisfied with a wholly machine-made product.

We are not in opposition or in competition with the makers of low priced automobiles. They occupy exactly the same relation to our position in the industry as the maker of three dollar shoes does to the better shoe at double the price—there is a wonderful field for both.

We are building 1200 Moline-Knight automobiles this year for 1200 men who do not wear $3 shoes, **because they believe they will get more than twice as much service and satisfaction** out of one pair of $6 shoes.

The analogy is simple — we have a quality car for quality men.

HOW DO YOU KNOW THAT THE MOLINE-KNIGHT CAR AT $2400 IS GOING TO GIVE YOU MORE THAN TWICE AS MUCH SERVICE AND SATISFACTION AS A CAR AT HALF THE PRICE?

You do not know—but you will investigate and find out if you are the careful buyer that we think you are.

The purchase of any automobile at any price is a serious investment—once people bought automobiles quickly as they might buy shirts or collars or a load of coal.

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They were impatient to ride and the makers could not keep pace with the demands of an army of buyers.

We are all out of that period.

You men who buy automobiles and sell them have learned a few things. It is well that you are in this new position, because we believe that as careful men become more insistent on getting their dollar's worth in every particular, then in that group there will be 1200 men who will (after investigation) put their hand on the Moline-Knight and say to the good dealer who has introduced them to our car—

"This is the car I want"

We know that you are not going to send us a check for $2400 and say, "Send me a Moline-Knight."

We know that you are not going to walk into the dealer's salesroom and buy **any** car that way.

We do know that you will measure the automobile you purchase by your standard of efficiency or if you are not qualified to pass judgment on automobiles, you will seek the advice of a man who knows.

The Moline-Knight asks nothing more of the man who buys or sells a car than that he shall buy it the right way. We like to have Moline-Knights go to men who have been convinced by the **quality of the car** and not by the **talk of the salesman.**

Cars that are sold this way stay sold—it does our good automobile no credit if it goes to a customer by the wrong talk route.

Come on right out in the open

Motor car history is being written with an indelible pencil **right now**—every day.

Just as the car maker has his problems, so you, too, as a dealer, have your own merchandising problems.

The $2400 Moline-Knight has jumped to the front so rapidly because there is a place for it in the automobile industry.

Here at last is a classy, high grade, powerful car for the man who wants the best and who does not want to spend $3000, $4000, or $5000—you know the kind I mean—the man with means who applies his shrewd business knowledge in buying a motor car.

And you know that in the last few years all makers of poppet valve motor cars have reached about the same state of efficiency. For this reason they are now being sold on a price basis and one dealer of a poppet valve car has about the same arguments as another.

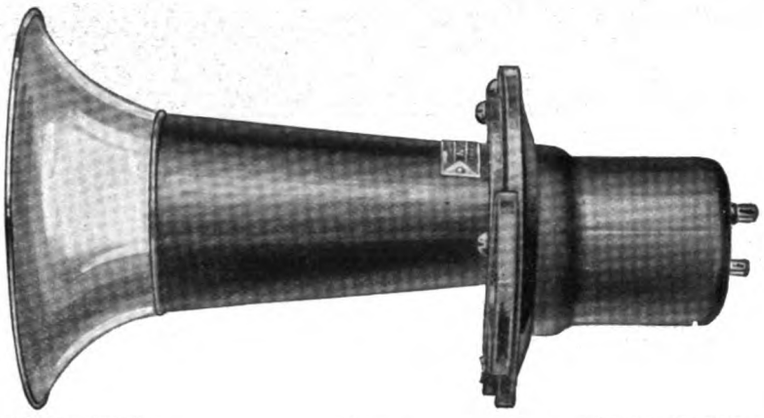
YOUR POPPET VALVE COMPETITORS WILL ALL BE IN COMPETITION WITH EACH OTHER—YOU WILL ONLY HAVE ONE COMPETITOR—THE POPPET VALVE, REGARDLESS OF ITS MAKE.

Get the idea!

At least it's worth while investigating. So before you lay this letter aside, write us—tell us what you **have done**—and we will tell you **what** we can do for you.

MOLINE AUTOMOBILE COMPANY
EAST MOLINE, ILL.

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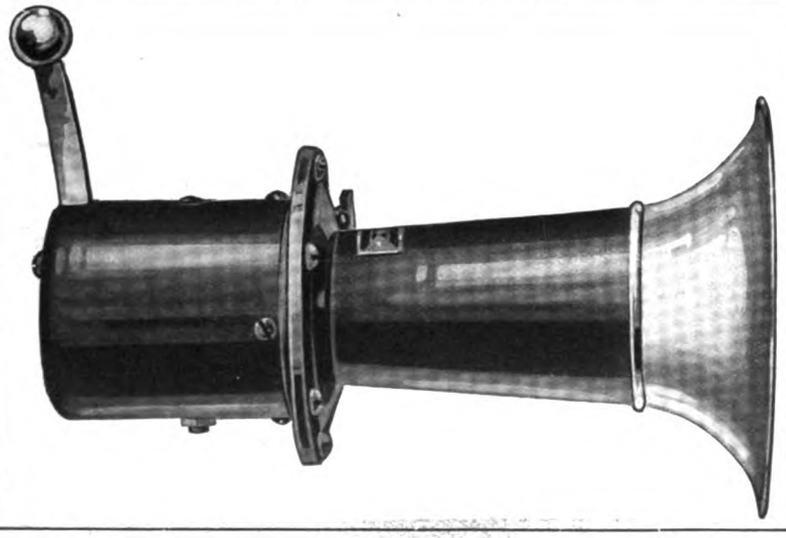
$9.50 to $15.00

SPARTON

Electric Motor Driven and Hand Operated Signal

The motorist cannot afford to depend on a good enough warning signal. When the time comes for action, he must have a horn that will compel quick, unthinking, instantaneous jumping—such is the discordant, action-compelling growl of the SPARTON when the button is pushed home. On country stretches a good pressure on the button produces a warning clarion that can be heard a mile down the road, giving everyone time to get out of the way. On city streets a light touch produces an inoffensive, but authoritative command, warning people at close range.

Hand Operated $7.00 and $8.00



Hand Operated $7.00 and $8.00

The Sparks-Withington Co., Jackson, Mich.

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THE CAPACITY TEST
DO YOU KNOW IT
?

THERE is a test to which every automobile may be put which may prove to be the capacity test.

Do you know it?

The "Capacity Test" is the motorist's dread. He unconsciously knows it exists, but probably never before has seen it expressed in words.

When you suddenly come upon a precipitous, winding hill, do you have a presentiment of not being able to negotiate it?

Do you fear it?

Then your unconscious self DOES know the "capacity test" and fears it. Some day you will point the nose of your car into it. Then what?

Summed up briefly, the "Capacity Test" is any trial to which a motor car may be put and fail to answer the touch of its master.

It is that test which no Stearns driver knows!

Hence Stearns owners are content. Stearns cars have the strength and inbuilt efficiency of seventeen years of successful motor manufacture to back them in every test. They easily overcome tests which prove to be the "Capacity Test" for cars not so well made.

THE F. B. STEARNS COMPANY
CLEVELAND, OHIO

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Careless or improper adjustment will spoil the efficiency of any piece of machinery. For care free service, automobile bearings should be non-adjustable—so that they are not at the mercy of the inexperienced user.

Hyatt Quiet Bearings, properly installed at the factory and given a little lubricant every once in a while have a life time of efficiency unequalled in any other bearing, because they are not adjustable.

Two books, one about motor car bearings in general for prospective purchasers, the other for automobile owners, will be sent on request.

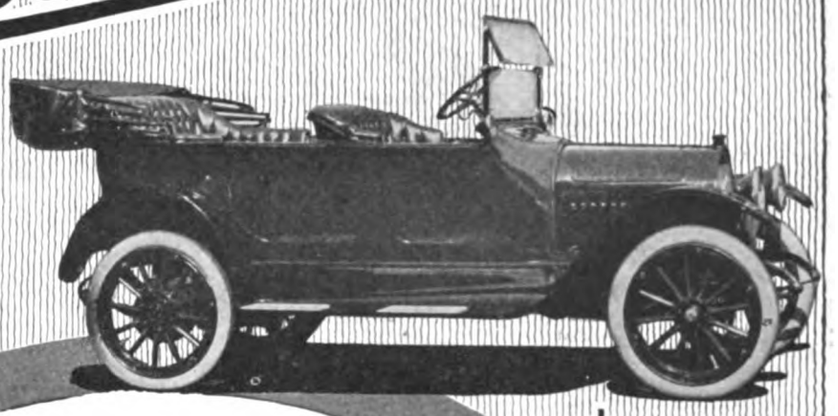
"Hyatt Quiet Bearings"

HYATT ROLLER BEARING CO.
DETROIT. CHICAGO
NEWARK. N.J.

HY-FLEX-ROL

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Studebaker



"FOUR" $1050

STUDEBAKER dealers have one argument that few, if any, other motor car dealers can rightfully use—and that is the FULL-MANUFACTURED argument.

For the Studebaker FOUR and the Studebaker SIX are manufactured by their maker to a greater extent and in a greater proportion of parts than any other car in the world.

Six thousand distinct and separate manufacturing operations, for instance, are required in the building of the Studebaker FOUR; and each and every one of these operations is performed by Studebaker.

Studebaker does not assemble — in whole or in part—Studebaker MANUFACTURES.

And because Studebaker MANUFACTURES Studebaker cars scientifically and conscientiously—and in huge quantities—they offer both dealer and owner the best motor car values in the world.

Studebaker

Detroit

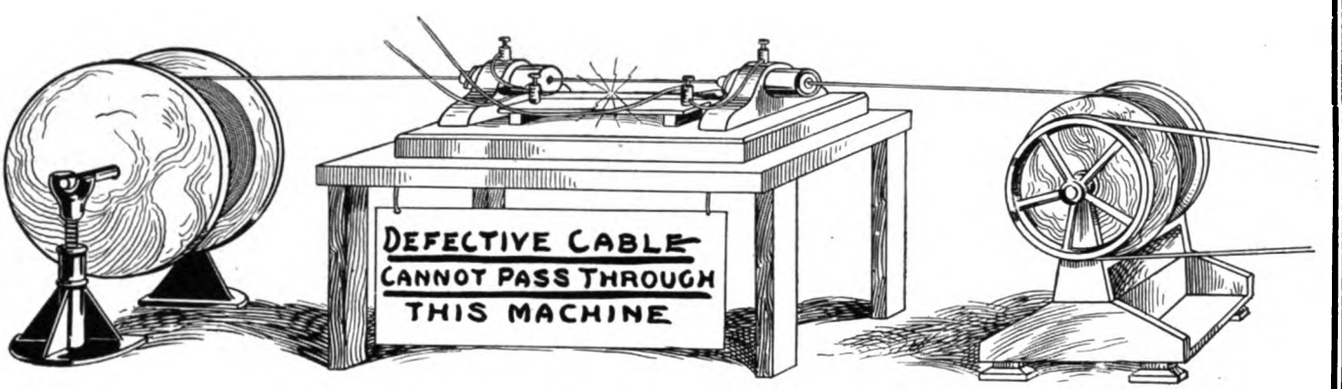
F. O. B. Detroit

FOUR Touring Car	$1050	*SIX Touring Car*	$1575
FOUR Delivery Car	1150	*SIX Landau Roadster*	1800
		SIX Sedan	$2250

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TESTING

Packard Cable



Preliminary Tests

This machine, patented and used exclusively by us, gives every foot of Packard Cable its last and toughest test before leaving the factory.

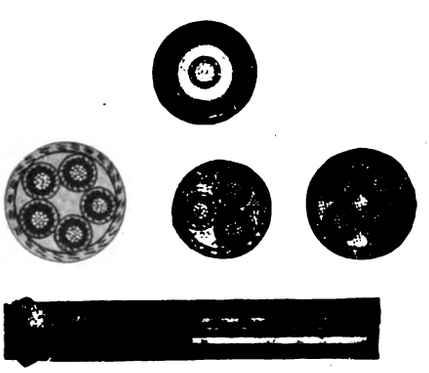
Before this break-down test is given there has been, all during the process of manufacture, most careful inspection of raw materials and thorough tests: —the core for mechanical strength and conductivity—the rubber coverings for tensile strength, flexibility and dielectric strength — braids for breaking strength, hardness and weaving quality—the enamel for oil and heat resistance together with flexibility—the completed cable for uniformity in diameter.

Then, as a final make-sure, the cable passing through the machine shown above is subjected to voltage far in excess of any it will ever get in actual service. Any defect in the insulation promptly stalls the machine.

The Real Test-Service

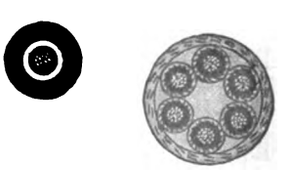
All these tests are but a preparation for the **real-quality** test which comes when the cable is in actual service on the car, motor boat or aeroplane. Here it gets the oil test, the heat test, the vibration test, the use and abuse test—all these a part of the efficiency and life test.

It's the *showing* Packard cable makes in the *service* test that counts with *you*—and with us. The phenomenal growth of our business is proof that the cable *stands* the test.



Combination High Tension Cable

Remember Packard cable has seal brown braids marked with two spiral red stripes—one in each direction. Insist on the "certified cable"



The Packard Electric Co.

DEPT. D **WARREN, OHIO**

(99)

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Cable Address "MAXCO"
WESTERN UNION LIEBER'S AND A.B.C. 5TH EDITION CODES.

MAXWELL MOTOR SALES CORPORATION

AUTOMOBILES

WOODWARD AND WARREN AVENUES

EXECUTIVE AND SALES OFFICE

DETROIT, MICH

June
26th
1914.

THE NEW 1915 MAXWELL "25."

EXTREMELY IMPORTANT TO DEALERS IN AUTOMOBILES.

Between July 15th and August 1st we shall announce,- place upon display and exhibit our new 1915 Maxwell "25," to retail at $750.

We shall begin the distribution throughout the country of this new 1915 "25" model by August 1st.

We confidently expect to be able to build 60,000 of these new 1915 "25" models retailing at $750. within one year.

We shall do all that human endeavor and our immense factory facilities can do to build at least 60,000.

I confidently predict that this new Maxwell "25" retailing at $750. will be the greatest sensation that the automobile world has ever known.

I base this prediction upon the car from the ground up - its chassis; its motor; the lines and size of its body; and the unexpected extra and additional features which will be placed upon this car.

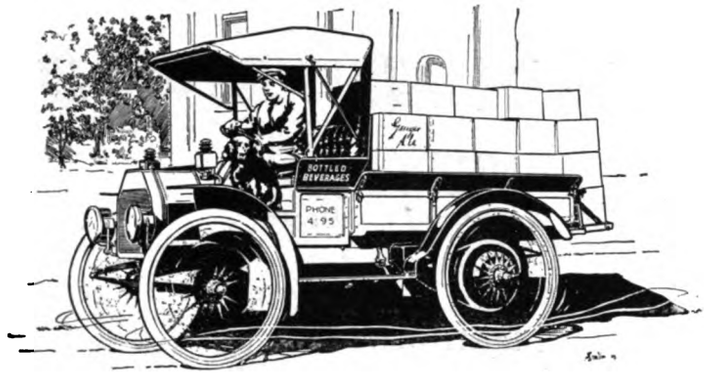
Walter E. Flanders.

President,

Maxwell Motor Co., Inc.

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"Best Selling Motor Truck on the Market"



THE International Motor Truck is a light-haul, quick-delivery truck that sells. It is ideal in size, capacity, and price for seven out of every ten truck prospects.

Every *International Motor Truck* on the street is a tireless booster for more sales. Remember there are more Internationals in use than any other truck made.

The International Motor Truck is saving money and increasing the trade of thousands of firms in over one hundred lines of business. There are scores of prospects in your neighborhood, just waiting to be shown what this truck will do for them.

Mechanically, the truck is right. It makes good. You need a good light truck to sell. We need good agents.

Write us for information, terms and territory

International Harvester Company of America
(INCORPORATED)

155 Harvester Building **Chicago USA**

New Departure Ball Bearings



A Fair Question Deserves a Fair Reply

In designing your next car, the question of bearing equipment will, of course, receive the serious consideration so important a question deserves.

In all fairness, New Departure ball bearings more than answer that question.

It is a bearing of guaranteed quality including high grade materials, accuracy of finish, and uniformity of dimension. It is the product of an American factory with ample capacity for prompt and complete deliveries without liability of troublesome delays such as are sometimes experienced by manufacturers who buy their bearings abroad.

Why not give New Departures a thorough tryout?

A line from you will bring our literature and representative. May we send either or both and inform you fully of our proposition?

The New Departure Manufacturing Co., Bristol, Conn.

Western Branch, 1016-17 Ford Building, Detroit, Mich.

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Just as soon as electric starting and lighting became a practical improvement, manufacturers found that it was necessary to equip their cars with some one of the various systems in order to sell their cars. **Public demand for a power-driven pump for inflating tires is becoming as pronounced.** Dealers find that their customers look for a power-driven tire pump quite as naturally as they do for an electric starting and lighting system, and it behooves the engineer to select this equipment with the same care and attention to details which guarantee service and satisfaction that he uses in selecting starting equipment.

Nowadays a car's reputation is made or unmade by the service and satisfaction those parts give which add pleasure, economy and satisfaction to motoring.

The

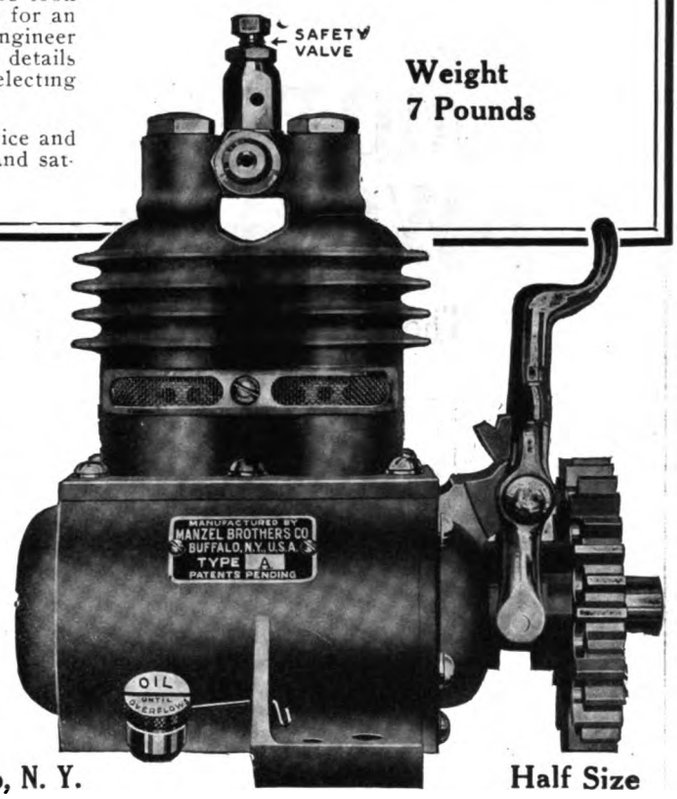
MANZEL

ENGINE DRIVEN TIRE PUMP

is standard equipment on many of the more popular makes of cars. Mechanically, it has reached a stage which will appeal to any engineer as being worthy of use on the finest piece of automobile mechanism known.

THE MANZEL ENGINE DRIVEN TIRE PUMP has been worked out so as to consume the minimum amount of power in proportion to the results delivered. We urge that you order one for testing purposes without delay.

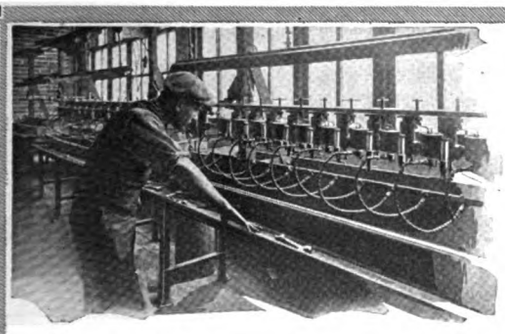
We carry in stock, fittings by which the MANZEL can be readily attached to Abbott-Detroit, Buick, Cadillac, Cole, Cartercar, Chalmers, Hudson, Howard, KisselKar, Maxwell, Mitchell, Oakland, Overland, Packard, Paige-Detroit, Reo, Speedwell, Studebaker, Stutz and others.



Weight
7 Pounds

Half Size

MANZEL BROS. COMPANY, 308 Babcock St., Buffalo, N. Y.



FOUR large factories in four different countries are busy turning out the Zenith. The leading cars of Europe use it. Nine prominent American makes are already converted. In export fields alone the Zenith equipped car has tremendous prestige. You can learn why in the catalog. Ask for it.

Trouble Hunts Among the Floats

MANY diverse operations are necessary in turning out the high grade Zenith Carburetor. Not the least important of these lies in the testing of float and float chamber under actual working conditions.

On long racks the carburetors are set up with floats and needle valves in place. Temporarily attached to each float chamber is a gauge glass, showing the level of the gasoline. The operator adjusts the gasoline valve to the required level and thoroughly tests the float action. Leaks in the castings are also noted. Nothing "gets by" these Zenith inspections—there is too much at stake.

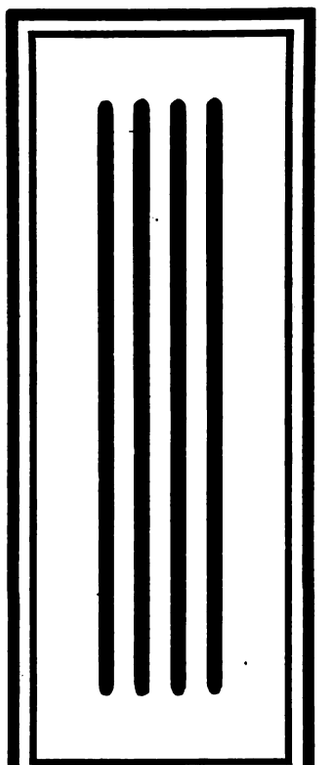
ZENITH The Carburetor Universal

ZENITH CARBURETOR CO. DETROIT, MICH.

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The Dealer's Paper



The Publication Serves the Manufacturer Best Which Helps the Dealer Most.

ALL advertising is an effect—an influence. In the automobile business, any advertising campaign that is not designed to have a strong dealer effect and a strong influence upon the trade is poorly, even thoughtlessly planned and will fall far short of what it might have accomplished. This is so because advertising effort must go before and parallel to selling effort, and trade advertising should be your intimate personal connection with your actual or potential selling force.

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because it helps them, and by so doing gives double the influence to its advertising, logically.

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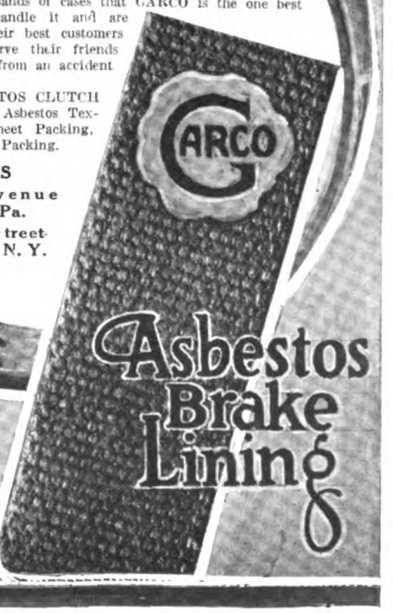
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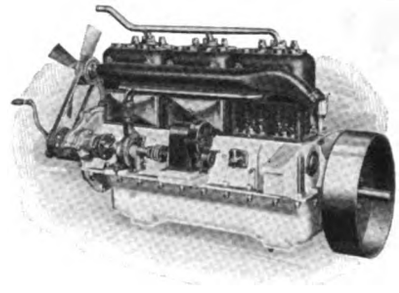
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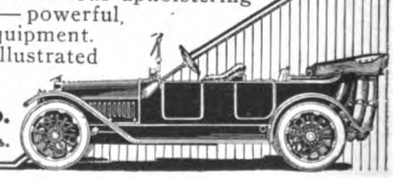
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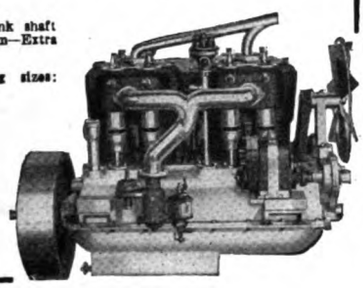
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A Car Full of Hill Climbing Ability
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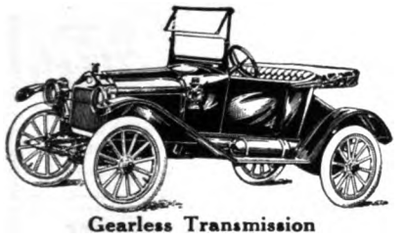
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Holley Carburetors	2.70
Rayfield Carburetors	6.50
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All tires and tubes—

30 x 3	casings $6.65	Grey tube	$2.35
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Springs, all sizes, at less than factory prices.	
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Model T Runabout	$500
Model T Touring Car	550
Model T Town Car	750

With Full Equipment, f.o.b. Detroit

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Write a request today on your business letterhead to The B. F. Goodrich Company, Akron, Ohio, or to one of its branches, which are located in all the principal cities.

DEALERS who are looking for a real opportunity to build a substantial, permanent business will find the 4-page advertisement of Century Electric Car Co. which appeared in Motor World, June 24, full of practical suggestiveness.

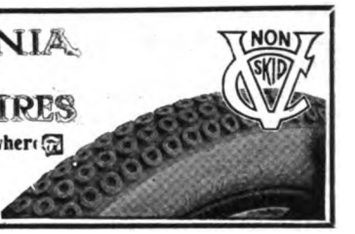
We have an *unusual* electric—and yet there is nothing freakish or radical—and, now is the time to write.

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HAYES MANUFACTURING COMPANY
DETROIT, MICHIGAN
Largest Users of Sheet Metal in the World

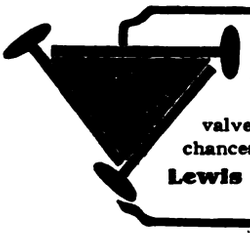
PENNSYLVANIA
Oilproof
VACUUM CUP TIRES
Making Their Mark Everywhere
Pennsylvania Rubber Company
Jeannette, Penn.



ONE-HAND TOP
SHARRER

TOP MAKERS don't overlook the
"Sharrer One Hand Top" agency
Be prepared for the Spring rush, write quick.
SHARRER PATENT TOP CO. Inc.
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STUTZ
Official Road Race Champion
The success of Stutz racing cars in contests means greater power and stronger parts in the vital places guaranteeing longer life and better service on the road. *Write for literature.*
Stutz Motor Car Company, Indianapolis



Ask Lewis about valves
We make valves exclusively—special heat-treated valves that "stand up" in service. Don't take chances. For anything in valves, write
Lewis Electric Welding & Mfg. Co.
TOLEDO, OHIO

HESS AUTOMOBILE AXLES
Your Car as Good as Its Axles
Hess Axles Make a Good Car
Enough Said
HESS SPRING & AXLE COMPANY, Cincinnati, Ohio

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"The Paper That Is Read, Not Merely Looked At"

It ought to be a regular weekly visitor in your office, Mr. Dealer. $2.00 per year—a small price for a big value. Subscribe today.

Motor World Publishing Co., 1600 Broadway, New York

ERE-LONG YOU'LL USE
LONG
Cellular—Honeycomb—Spiral Tube Cooling Systems for Pleasure Cars — Trucks — Tractors.
Write to LONG MANUFACTURING COMPANY, Detroit, U. S. A.

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SAXON $395



From Coast to Coast

ON July 4 the Saxon car finally demonstrated its independence of all road conditions. For on that famous day a Saxon reached San Francisco, having traveled 3389 miles overland from New York in 30 days across the Lincoln Highway—the first automobile to make a continuous trip from New York to San Francisco over the Highway and the first car of its size and price to make the journey from coast to coast.

Over the Alleghanies, over the Rockies, over the Sierras went the Saxon without faltering. Through mud, through sand, over the great plains, across the great American Desert, the Saxon held to its schedule and averaged 30 miles to the gallon of gasoline all the way.

8,000 Miles in 60 Days

It went from New York to Canton, Ohio, across the long grades of the Alleghanies through the hottest weather of the year, without needing a drop of fresh water in the radiator. Folks used to say "Cool as a cucumber," now they say "Cool as a Saxon."

The same car from April 8 to May 8, ran 135 miles a day for 30 consecutive days—4050 miles—averaging 30 miles to the gallon of gasoline and 150 miles per quart of oil, covering the entire distance on the original set of tires. In 60 days this transcontinental car has covered almost 8,000 miles—as far as the average owner drives in two years.

34.53 Miles per Gallon

On May 16, 100 regular stock Saxon cars in as many towns all over the country, made non-stop runs of 200 miles each, averaging 34.53 miles per gallon of gasoline—less than half a cent a mile for fuel, less than ¼ cent a mile per passenger.

Everywhere and under all road and weather conditions the Saxon makes good. Over five thousand Saxon cars have been delivered and orders come faster all the time. This can mean only one thing—that the Saxon has found its market because the Saxon car is pleasing those who use it.

And here are some reasons why the Saxon is making good everywhere:

EXCEPTIONAL ROOMINESS—Plenty of width for two big people to sit comfortably; plenty of length for a tall man to stretch his legs.

COMFORT—Good cushions to sit on; a comfortable back to lean against; springs of cantilever type, same as on high-priced foreign cars.

GOOD LOOKS—Body lines stylish, following most up-to-date French practice; everything in good taste.

EASE OF HANDLING—Nimble footed; turns short; takes up little room; quick to run in and out of traffic. Holds the road at all speeds. Won't skid.

ECONOMY—Low gasoline charge; low oil, low tires, low repairs. 28 to 32 miles per gallon of gasoline; 150 miles per quart of oil.

PERFORMANCE—Stands up under severest usage and keeps running as well as high priced cars; holds many records for durability and reliability.

MOTOR—Four cylinders of special Saxon design; long stroke motor that gives almost the power and flexibility of a "Six."

HONEYCOMB RADIATOR—Finest type known; large cooling surface; keeps motor cool.

WIRE WHEELS—Come as standard equipment; on other cars from $25 to $100 extra. Easy riding, easy on tires.

SLIDING GEAR TRANSMISSION—Proved by engineering practice to be the only really correct type.

DRY PLATE CLUTCH—Same type as $2,000 cars employ.

No other car in the world offers you these features of high grade construction at a price anywhere near the Saxon price of $395. Get in touch with us now. Just ask for catalog.

The 3389-mile run of the coast-to-coast car has again demonstrated to the nation the economy and durability of the sturdy $395 Saxon

Saxon Motor Company, Detroit

Address Dept. N

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Tell the motorists in your town that you are a Klaxon dealer

THERE'S a big demand for Klaxons—everywhere.

Motorists know the Klaxon as they know no other signal. They know it as the STANDARD—the signal by which all other signals are judged and compared. They are constantly being told more about it—by their friends who use Klaxons—by our own advertisements.

Every day motorists in your town are looking for a place to BUY Klaxons. If yours is that place—tell them so.

Tell them in the newspapers

We will pay half the expense of your Klaxon newspaper advertising, and we will furnish without cost a large variety of electrotypes. These are original, distinctive, characteristic of all Klaxon advertising. You will be proud to have your name on them.

Tell them through the mail

We will furnish striking folders and leaflets—several different kinds—in quantities with your imprint. These are in keeping with the high Klaxon standard of printed matter. They may be enclosed with your monthly statements or sent out separately.

Tell them in your show-window

We will send window signs, window display stands and advertisement frames.

Write us for further particulars. Address Department X2

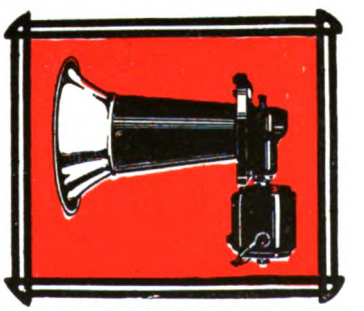


KLAXONET

Lovell-McConnell Mfg. Company Newark, N.J., U.S.A.

KLAXON

"The Public Safety Signal"



KLAXON

This advertisement planned, written and set up entirely in the Klaxon Factory. Type composition by the Klaxon Press with "Klaxon" type especially designed by Goudy.

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MAYO RADIATORS



EVENTS have proven that more courage and ability are required to imitate Mayo quality than to copy Mayo design. Quality is the basis on which Mayo Radiators have been built and will continue to be built.

MAYO RADIATOR COMPANY
New Haven, Connecticut

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MOTOR WORLD

A Trade Paper Giving the World's Motor News

Volume XL
No. 4

New York, July 22, 1914

Ten cents a copy
Two dollars a year

The Rustproof Metal Body is Best for Owners to Buy—Easiest for Dealers to Sell

Member of

Many of the most prominent American and European manufacturers of motor cars and bodies have added greatly to the worth and popularity of their products by making them absolutely **rustproof.** A rustproof metal body holds its finish and retains its beauty. Corrosion can't develop underneath the finish, causing it to check and crack.

This feature makes a strong appeal to car buyers. They know that a car with a rust-proof body is best to own. And the dealer in turn knows that such a car is easier to sell.

TRADE LIONOIL MARK

provides an easy method for rustproofing any metal body. It may be applied clear or mixed with primer or pigment.

A request will bring you facts as to the results being accomplished by other manufacturers—facts that may mean both a better output and a lower production cost for you.

Established 1858

BERRY BROTHERS (INCORPORATED) World's Largest Varnish Makers

Branches in Principal Cities of the World

FACTORIES: Detroit, Mich., Walkerville, Ont., San Francisco, Cal.

Published Weekly by the Motor World Publishing Company, 231-241 West 39th St., New York

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1604

Seven Solid Reasons for Using Gurney Bearings

What are the facts behind the Gurney success?

Distinctive features of Gurney Ball Bearings.

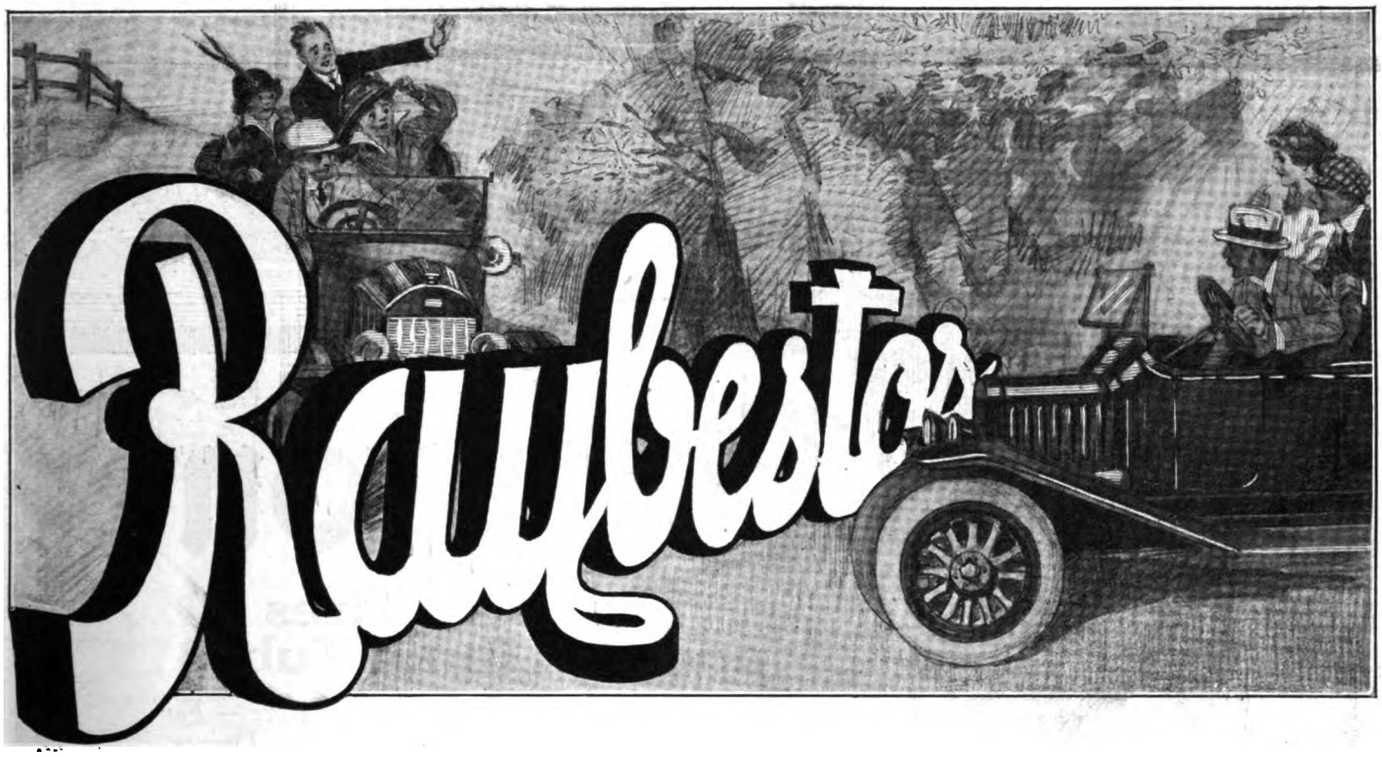
1. Unique Design. Full Type, No Filling Slots, Full Depth of Raceways.
2. Thrust Capacity that puts them in a class by themselves, in Radio-Thrust Bearings up to 100 per cent.
3. Single piece, Jointless Separator, permitting the maximum number of the maximum size of balls.
4. Raceways ground to the contour proved and admitted to be the most efficient, and always so ground.
5. Rings ground to a degree of concentricity unapproached by any other make.
6. Made to a degree of accuracy unequalled by any others.
7. Uniformity. Every ring that goes through our factory is not only produced by processes that give it these distinctive characteristics, but is subjected to drastic tests, to the most minute and rigid inspection, which none but the perfect can pass. If it were not for our wonderful processes of production we could not afford to subject our products to the hardships of testing and inspecting they have to undergo. The latter is made commercially possible by the former. For these reasons our bearings have, as perhaps the most important of all, this quality of uniformity.

CAPACITY GURNEY ENDURANCE

Gurney Ball Bearing Company

Jamestown, N. Y.

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"Hey, look out there!"
"Oh, we're all right. My brakes hold like a stone wall ten feet thick."
"So do mine—mine are lined with Raybestos."
"Sure. Mine are too."

Like a Solid Wall of Safety

You will never have an accident due to slipping brakes if they are lined with Raybestos. Raybestos retains its tremendous gripping power even when worn down as "thin as a shadow," because it is made of **long fibre** asbestos and impregnated with our special treatment **in every shred.** Our exclusive patented process alone makes this possible.

The proof of Raybestos quality is this guarantee: If it fails to give a full year's service, we will furnish new lining without charge. No other brake lining has a definite guarantee.

Never forget that your car is no safer than its brake lining. Specify Raybestos. Insist on getting it. You will know it by its silver edges and the name on every foot.

THE ROYAL EQUIPMENT COMPANY

1379 Bostwick Avenue Bridgeport, Conn.

TRADE MARK Raybestos REG. U.S. PAT. OFF.



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Firestone

Non-Skid Tires and Red Inner Tubes

For the Long Grind — For the Hot Pace — For True Economy All the Time for Every Driver.

The rubber in them, being supremely good, has greatest heat resistance—greatest wear endurance. And because Firestone Tires and Tubes contain an extra quantity of this supremely good rubber.

In Building the Tires we use layers and layers of the world's strongest fabric, without stint, to give the stoutest body to our long-life rubber.

And there is no hurry in the building. No workman, no machine, no inspector is pushed. The layer-built, double cured process admits of minute and multiplied inspection.

The massive letters of the Non-Skid Tread are built on to and cured into an integral part of the body. No skid can start; the letters radiate the heat of road friction; insure perfect traction, saving gasoline; protect tire from bruise, cut and puncture; give supreme riding comfort and car protection.

In Building the Tubes we roll sheet after sheet of the pure Up-River Fine Para. Layer by layer the sheets are built up into a thick, dense armor-plate of live rubber. Then thickness after thickness of this is rolled on the mandrel and Firestone-cured into one flexible wall of unequalled sturdiness.

Again—strength beyond comparison—endurance unapproached.

Leading dealers everywhere recommend Firestone equipment.

Firestone Tire & Rubber Co.

"America's Largest Exclusive Tire and Rim Makers"

Akron, Ohio **Branches and Dealers Everywhere**

Firestone Accessories

In our long list there is everything you need in emergency. You should know the handiness and sureness of Firestone Cementless Patches for instant roadside repairs—strong and adhesive with a projecting lip of fabric for the easy removal of patch from muslin.

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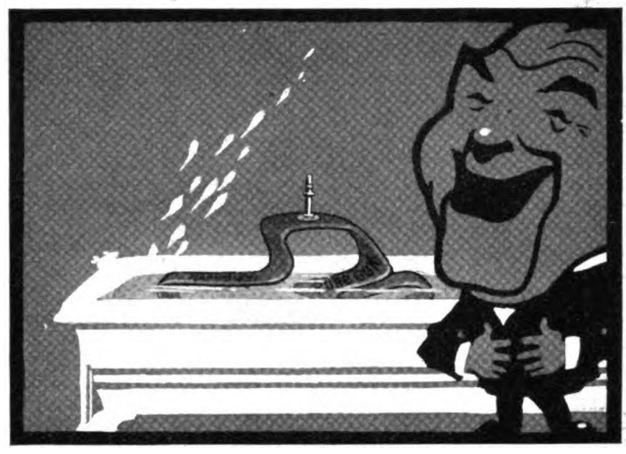
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Being able to float is just a stunt that Kelly-Springfield Gray Tubes will perform for your amusement. But the purity of rubber that makes them float will also make them wear. And that's more than amusing—it's mighty saving and gratifying.



Kelly-Springfield Tire Company

Corner Broadway and 57th Street, New York

Branch Offices: New York, Chicago, Philadelphia, Boston, Seattle, Atlanta, Cincinnati, San Francisco, Los Angeles, Cleveland, St. Louis, Detroit, Akron, Ohio.

The Hearn Tire & Rubber Co., Columbus, Ohio.
Bering Tire & Rubber Co., Houston, Texas.
The Boss Rubber Company of Denver, Colorado Springs and Pueblo.
The Olmsted Company, Inc., Syracuse, N. Y.
Southern Hdwe. & Woodstock Co., Ltd., New Orleans, La.
Atkinson Tire & Supply Co., Jacksonville, Fla.
Central Rubber & Supply Co., Indianapolis, Ind.
C. D. Franke & Co., Charleston, S. C.
K. & S. Auto Tire Company, Limited, Toronto, Can.
Todd Rubber Co., New Haven, Conn.
L. J. Barth, Rochester, N. Y.
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Barnard & Michael, Buffalo, N. Y.

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NOW is the time to get an Overland.

Not tomorrow, next week or next month, ***but now***—

Not when the summer is half gone and you have wasted, by hesitating, just half of the very best motoring season, ***but now***—

This time of year is actually made to order for motoring. The days and the evenings are perfect. The roads are in the very pink of condition. Nature, having set the stage, is coaxing and urging you and yours to take advantage of this superb weather.

You, who are in a state of indecision as to when you want your car, why wait?

Before you know it the best part of the year will have slipped away and you'll bitterly regret having waited.

Come! Get yourself and family one of these big, powerful and beautiful Overlands today. It will mean the dawn of a new tomorrow.

The Overland costs less than any other similar car; is exceedingly simple and inexpensive to operate, and it lasts as long and gives you just as much fun, pleasure and sport as any of the highest priced cars.

Make arrangements to see our dealer today. Lose no more time.

Literature on request. Please address Dept. 50

The Willys-Overland Company, Toledo, Ohio

BRIEF SPECIFICATIONS: Electric head, side, tail and dash lights; Storage battery; 35-horsepower motor; 33 x 4 O. D. tires; 114-inch wheelbase; Mohair top, curtains and boot; High-grade speedometer; Clear-vision, rain-vision, windshield; Electric horn

$950
Completely equipped

$1075
With electric starter and generator

Prices f. o. b. Toledo

Manufacturers of the famous Overland Delivery Wagons, Garford and Willys Utility Trucks. Full information on request.

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MOTOR WORLD

Vol. XL New York, U. S. A., Wednesday, July 22, 1914 No. 4

BUICK LINE APPEARS FOR 1915 WITH PRICES PARED

Reductions of $335, $100 and $50 Are Made—Body Lines Improved—1914 Fundamentals Are Retained.

The 1915 Buick line will sell at lower prices in all models this year. The six is cut $335 and lists at $1,650. On the four-cylinder touring cars there is a reduction of $100 each, and on the two four-cylinder roadsters a reduction of $50 each.

Many improvements have been made, although the motor sizes, tires and general design remain unaltered. Tungsten steel valves are used instead of the nickel steel ones, to avoid pitting and wearing; pistons are generally 1 inch longer, to eliminate piston slap. A new method of oiling the piston has been used which was designed to avoid smoking and yet give adaquate lubrication. Instead of one ring in each piston groove there are now three.

Body lines are generally improved. The radiators have been rounded fully at the top and their edges are coped over. The upholstery is now kept with in the body lines. Concealed hinges are used. A rain vision windshield is fitted and inside operating curtains are features of all equipment.

On the six-cylinder model cantilever rear springs are fitted. On all models the combination Delco cranking, lighting and ignition system is used, although much simplified. An automatic spark advance is fitted in addition to the regular hand advance on the steering wheel. The Delco apparatus has been simplified by eliminating the ignition relay and also the cutout relay and using a switch on the dash which closes the ignition and generating circuits.

On the six-cylinder and large four-cylinder models a new method of delivering gasolene to the carburetter is used, this being a modification of the Stewart vacuum feed system. The vacuum apparatus is mounted on bosses on the intake manifold and is high enough so that fuel can flow from it to the carburetter by gravity.

All models are in reality refinements of the 1914 line.

Elgin Entry List Growing.

Ralph De Palma, with the German Mercedes that won the French Grand Prix, and Bob Burman, with a Peugeot, are the latest entrants for the Elgin road races, August 21-22, each being entered in both events. Other entries are Schroeder's Peugeot, two Sunbeams, two Stutzes, and Rickenbacher's Duesenberg. The Rudge-Whitworth Company, Ltd., which announced that it would offer prizes for the first race, has extended its orer to cover both races. The prizes are: to the car coming in first, $200; second, $100.

Another Cyclecar from Detroit.

For the purpose of producing a cyclecar, the States Cycle Car Co. has been organized in Detroit, Mich., with a capital stock of $150,000. Charles Valade is president, and associated with him are Samuel E. Jones, vice-president, and Victor Valade, secretary and treasurer; George W. Meredith is superintendent and chief engineer. The site for a plant has not yet been decided upon; temporary offices have been established at 37 First street.

Changes Name and Enlarges Plant.

The name of the Schiedel-Thompson Mfg. Co., Indianapolis, Ind., has been changed to Metal Auto Parts Co.; no change in management or organization has been made, however. The company proposes to considerably enlarge its manufacturing plant in the immediate future.

OAKLAND'S 1915 LINE IS NARROWED TO 2 CHASSIS

Five Body Styles Are Mounted on a Four and a Six—One Four Discontinued—Price of Six Reduced.

The Oakland program for 1915 has been narrowed down to two chassis—a four and a six. On these, five types of bodies are fitted.

The four-cylinder Oakland of 1915 is called Model 37 and is a much-altered continuation of model 35, the smaller four of last season. Its price is still $1,200. The six-cylinder type, designated as Model Six-49, is the new edition of last season's Model 48. It has been reduced in price $100 to $1,685. Last season's larger four, Model 43, has been discontinued.

The four is not only mechanically practically a new job throughout, but its body lines are truly European. The six has not come in for much mechanical change, but its body has been much modified and holds to practically the same design as the four, only on a somewhat larger scale. The bodies are of the boat body type which have appeared in Europe. The V-radiator is retained in a form which harmonizes with the new design.

The 4-37 has a 3½ by 5 L-head motor and three-bearing crank shaft, which is the same as last year, but the pistons have been crowned on top, adding strength without weight. They are fitted with nine thin carbon steel rings, three to each ring slot. The rings have square joints. The valves have been increased from 19/16 to 1⅝ inch. The radiator has 20% greater capacity than last season and water is circulated by a centrifugal pump located ahead of the Delco electric unit on the right side.

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The Webb Jay or Stewart vacuum-gravity gasolene feed system is used. The vacuum tank is mounted on the front of the dash. The current control has been connected to the automatic regulator which keeps the battery charged at the lower speeds. Headlights are provided with a dimming attachment; side lamps are eliminated as being unnecessary under the circumstances.

The ignition distributor which was last year separated from the main electrical unit has again been made integral with it. When the ignition switch is off the electric circuit is broken, preventing operation of the horn by curious passers-by when the car is standing. Three speed gearset and center control are retained.

Torque rods have been dispensed with, relieving the chassis frome of sudden shocks, and Hotchkiss drive to the rear axle has been adopted with a tubular propeller shaft. The wheelbase remains 112 inches and tires are 33 by 4 on demountable rims. Equipment includes a one-man top and rain-vision ventilating windshield.

The 6-49 is provided with seven-passenger touring, roadster or speedster bodies, its wheelbase remains 123½ inches. Its mechanical details are much the same as those of the four, and the chassis is really a continuation of that of last year. All springs are underslung. The tires are 35 by 4½ on demountable rims.

Sioux City Plans Longer Race.

E. R. Schultz, secretary of the Sioux City Automobile Club and Speedway Association, and who managed the recent Sioux City race, is at the head of a syndicate which has bought the stock of the other members. The syndicate will convert the present dirt track into a speedway and promote a race next year. A purse of $25,000 will again be offered, but the distance may be increased from 300 to 400 miles. It is planned to incorporate for $100,000 with $50,000 paid in. The new company will take charge within 30 days.

Road Builders to Convene in 'Frisco.

At a special meeting of the board of directors of the American Road Builders Association, which was held at Hotel Astor, New York city, July 17, it was unanimously voted to hold a joint meeting with the American Highway Association in conjunction with the Panama-Pacific Exposition in 1915. The meeting will be held either in San Francisco or Oakland, and the exact date will be determined later.

POPE PLANT TO BE SOLD AND BUSINESS WOUND UP

Court Authorizes Receiver to Sell Personal Property in Hartford—Plant Will Probably Be Entirely Dismantled.

Colonel George Pope, receiver of the Pope Mfg. Co., has been authorized by the court to sell at public auction that personal property of the company which is in Hartford, Conn., and it is likely that it will mean the end of the Pope company as a motor car manufacturing enterprise. Other property, including the bicycle plant, is located in Westfield, Mass., but this is within the jurisdiction of Massachusetts courts. The motor car plant is in Hartford.

Colonel Pope regards it as better to sell the machinery and equipment in small lots to avoid its being taken in one parcel by junk dealers. He expressed his belief that the small lot sale would bring in a greater return and it is hoped to secure a small payment for the preferred stockholders. Under all plans previously proposed it had not seemed possible to secure much if anything for them.

Business at the Hartford factory, which has been continued in part by Colonel Pope, is to be discontinued as soon as possible. It is expected that the plant will be shut down by August 20. The receiver has $130,000 on hand and a dividend will be paid to creditors before September 30, it being regarded as more advisable to pay out the money than to keep it and pay taxes on it.

Bosch Adds 10 Service Stations.

To the already long list of service stations throughout the country, the Bosch Magneto Co., New York, has added the following: Pollard Auto Co., 232 Main street, Nashua, N. H.; Weeks Garage, Patchogue, N. Y.; Harnell Garage, Babylon, N. Y.; Reilly Bros. & Raub, 44-46 No. Queen street, Lancaster, Pa.; Le Jeal Cycle & Mobile Works, 1721-1723 Sassafras street, Erie, Pa.; S. H. Heginbottom & Son, Saginaw, Mich.; Eric J. Gustafson, Rockford, Ill.; Lawrenceville Auto Co., Lawrenceville, Ill.; Cadillac Motor Car Co., 202 Government street, Mobile, Ala.; Gibbes Machinery Co., Columbia, S. C.; J. F. Charley Auto Co., Evansville, Ind.; C. A. Gossard Auto Co., 122-124 S. Fayette street, Washington, C. H., Ohio; N. J. Auto & Supply Co., 38 N. Delaware avenue, Camden, N. J.; Central Auto & Supply Co., Jackson, Mich.; Shrive Incorporated, 64 Warburton avenue, Yonkers, N. Y.; Mattoon Motor Car Co., Mattoon, Ill.; Ward's Vulcanizing Works, 27 So. Main street, Concord, N. H.; W. A. Hanford, 52 No. Main street, So. Norwalk, Conn; Rippowam Garage, Stamford, Conn.

Gray & Davis Add Service Stations.

The following have been added to the service stations already appointed by Gray & Davis, Boston, Mass.;

Texas Garage, Austin, Tex.; Reus Bros. Co., Baltimore, Md.; P. K. Manning, Dallas, Tex.; Western Battery & Magneto Co., El Paso, Tex.; Hulburt Still Electrical Co., Houston, Tex.; Motor Supply Co., Phoenix, Ariz.; Henderson Garage, Shreveport, La.; G. Norman Baughman Co., Tampa, Fla.; B. J. Robinson Machine Works, Vicksburg, Miss.

Denby Trucks Ready August 1.

The Denby Motor Truck Co., which recently was organized in Detroit, Mich., by Garvin Denby, formerly secretary and treasurer of the Federal Motor Truck Co. and a director of the Century Moto Car Co. and the Hayes Mfg. Co., will have its first product ready for delivery by August 1. There will be but one model produced and this will have a capacity of 1½ tons. The wheelbase will be 120 inches. It is planned to produce 500 vehicles between now and July, 1915. The plant of the company is located at Du Bois and Franklin streets and provides 20,000 square feet of floor space.

Frost Gear and Baker Forge Merger.

The Frost Gear & Forge Co., Jackson, Mich., has increased its capital stock to $300,000, nearly all of which is paid in. Arrangements have been made to take over the affairs of the Baker Drop Forge Co., Jackson, and the two concerns thus merged will be known as the Frost Gear & Forge Co.

More Room For Indianapolis Eisemann.

The Indianapolis branch of the Eisemann Magneto Co., formerly located at 514 North Capitol avenue, has been removed to 415-417 North Capitol avenue. The move has been made in order to provide the larger quarters that have been made necessary by greatly increased business.

Reblin Crosses Greater Divide.

Albert E. Reblin, during more than 12 years assistant purchasing agent of the Olds Motor Works, Lansing, Mich., passed away after a long illness, July 12, in Detroit.

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INTERSTATE COMMISSION TO ALLOW RATE INCREASE

Federal Body to Grant Part of 5% Raise Asked by Freight Carriers—Applies to Complete Cars, Parts and Accessories.

The decision of the Interstate Commerce Commission, which, it is expected, will alter considerably freight rates on all of the Eastern railroads, has been finally approved and will be handed down this week. The railroads in the territory east of the Mississippi and north of the Ohio asked for a flat horizontal freight rate increase of 5 per cent, but it is not likely that this will be granted.

Washington despatches state that a certain advance in rates will be made, but that the situation does not justify the 5 per cent increase asked for on class ratings or commodities.

In any case, regardless of what the increase may be, the report will make very plain that such increase as is made will not afford any just reason for either wholesale or retail dealers to increase the price of any product.

The particular significance of the report to the motor car industry lies in the fact that although an increase in rates on such commodities as coal, limestone, sand, cement, stone, and various petroleum products, etc., will be denied, there will be an advance in class rates.

In general, class rates apply on goods shipped in boxes, crates, etc., and this classification includes not only complete motor cars, either in carload lots or less than carload lots, but parts and accessories, etc., as well.

In other words, if the commission grants the increase of 5 per cent, the freight rates on motor cars and parts will be advanced accordingly.

The report in full will be a voluminous one and will affect 44 railroads doing an interstate business in the territory east of the Mississippi and north of the Ohio and Potomac rivers.

In all, some 23,000 tariffs will be altered, and it is expected that an additional revenue amounting to approximately $16,000,000 annually, will flow into the coffers of the railroad companies. The commission has delved into statistics, and will recommend that the railroads economize $25,000,000 a year.

Used Cars Going Abroad.

That the used car business is at present in excellent condition is the opinion of Louis Mansbach, who is the treasurer of the Times Square Automobile Co., New York city and Chicago. During the past year the company has sold more than 3,000 cars, and during one week 31 cars were shipped to foreign countries. Of these, 25 went to Australia, 3 to New Zealand, 2 to Athens, Greece, and 1 to India. "This year's business doubled last year's," says Mansbach, "and next year we expect to double this year's."

Remington to Build a Cyclecar.

The Remington Motor Co. and the Remington Motor Sales Co. have been formed by Philo E. Remington, grandson of one of the founders of the Remington Typewriter Co. and the Remington Arms-Union Metallic Cartridge Co., which family connection caused the circulation of the unfounded report that the "Remington Arms was going to build a cyclecar."

The Remington Motor Co., incorporated in New Jersey at $500,000, will build a cyclecar, and the Remington Motor Sales Co., incorporated in New York at $150,000, will sell it in New York state. At present Remington is working out his plans at 1789 Broadway and states that he soon will be in a position to disclose the directorates of his companies and the details of his car specifications.

Changes Among Prominent Tradesmen.

John J. Ryan, former manager of the Detroit branch of the Wheeler & Schebler Co., Indianapolis, Ind., has been added to the traveling staff of the Hupp Motor Car Co., Detroit, Mich.

Frank J. Mooney, in addition to having charge of the advertising department of the Hupp Motor Car Co., Detroit, has been made sales manager, as the result of the efficient work performed while in temporary charge of the Spring selling campaign.

Frank Welch, for the past two years in charge of the Bay City Tire Repair Co.'s business, Bay City, Mich., has become identified with the Pontiac Motor Supply Co., Pontiac, and will have entire charge of its vulcanizing and repair department. Previously he was connected with the Detroit Tire Repair Co.

Ralph Murphy, who long has been intimately connected with the engineering department of the H. H. Franklin Mfg. Co., Syracuse, N. Y., has been advanced to the post of chief engineer. During the past two years he had been head of the service department. He succeeds Arthur Holmes, who for the past six months has been vice-president and sales manager of the Franklin Automobile Co.

SMOOTHING THE SAND FOR GALVESTON BEACH RACES

Texas Shore Being Sandpapered to Permit Maximum Speed—Cash Prizes and Trophies Attract Good Entries.

Every effort is being made to put the best possible surface on the beach course, Galveston, Texas, where a speed carnival will be held for four days beginning July 30. Debris is being removed and split-log drags used to smooth the hard sand. Enormous volumes of water are being pumped on the course and also on the parking ground by a big dredging machine, to pack down the sand and afford a firm footing for the cars. Already cars are making high speeds in practice, and all that seems needed is a little consideration on the part of the weather man.

The big event will be the Cotton Carnival Sweepstakes, for which cash prizes amounting to $3,250 are offered.

Already the entry list includes 12 names, as follows:

Driver.	Car.
S. F. Duesenberg	Duesenberg
Eddie Richenbacher	Duesenberg
Bill Endicott	Duesenberg
Not named	Duesenberg
Joe Horan	National
George Clark	Texas
Billy Chandler	Braender Bull Dog
Jack Le Cain	Chevrolet
H. L. Kindred	National
Conde Moseley	Studebaker
F. Stringer	Peugeot
Chas. F. Keene	Beaver Bullet
T. C. Jones	Mercer
Not named	Delage

Sixteen events are on the list for the four days' racing, and the cash prizes amount to $4,650, in addition to which a number of valuable trophies will be hung up. It is expected that there will be a large attendance. In the first place, the event is the only one of its kind in the Southwest; then the roads in the vicinity have been greatly improved recently, making motor car travel much easier; and preparations for taking care of visitors have been made on a large scale. The rebuilt grandstands will accommodate 4,000 people, and they have been so strengthened that they will carry safely double the weight of the number of people for whom there are seating accommodations.

The Beaver Bullet, piloted by Charles

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Keene, already has attained a speed of 94 miles an hour in practice. Chandler is at work with the Braender Bull Dog, and H. L. Kindred, of Dallas, is warming up with a National.

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National Enjoins Bright Star Battery.

The Bright Star Battery Co., New York city, has been enjoined by the National Carbon Co., Cleveland, O., from using the words "Mars-Chlor" and "Tun" on batteries; also from using the catalog numbers 1,600 to 1,699 and 1,700 to 1,799. The National Carbon charges that "Mars-Chlor" is an imitation of "Merchlor" and "Tun" an imitation of "Tungsten," National Carbon trade names.

The National Carbon also charges that Bright Star took the National catalog numbers and prefixed them by the figure 1, making 600 into 1,600, etc. The suit was brought in the United States District Court in New York city and the injunction is preliminary. The batteries which it is charged have been imitated are made by the American Ever Ready Works of the National Carbon Co., which are in New York city.

Stewart Moves Against National Carbon.

Suit has been brought in the United States District Court in Chicago, Ill. by the Stewart-Warner Speedometer Corp., Chicago, against the National Carbon Co., Cleveland, for alleged infringement of a Stewart magnetic-type speedometer. This is an amendment to the original bill filed a few months ago against the American Ever Ready Co., New York, with offices in Chicago. The American Ever Ready Co. and the National Carbon Co. have consolidated and the Chicago branch, now called the American Ever Ready Works of the National Carbon Co., was the original defendant. The American Ever Ready Co. states that it will fight the case.

Warm-Hand Wheels For All Cars.

The Warm-Hand steering wheels which have been marketed for two years for Ford cars, will be supplied as interchangeable wheels for Overland and Studebaker cars this Fall. The Warm-Hand Steering Wheel Corp., Inc., Poughkeepsie, N. Y., manufacturer of these wheels, also will supply specially constructed wheels to fit all cars. These wheels will be interchangeable with the standard steering wheels, the same as on Fords, Overlands and Studebakers. The heating device in these wheels consists of two electrical resistance coils inserted at opposite points in the rim of the wheel. Electric current to heat the coils is furnished from the battery.

MAXWELL ACCEPTS RULING OF A. A. A. CONTEST BOARD

Agrees to Retract Advertising Regarding "Maxwell 25"—Board Acts on Other Racing Rule Violations.

The Maxwell Motor Co., Detroit, has agreed to retract its advertising which followed the Indianapolis race, May 30, when the Maxwell car, No. 25, which finished in the race was advertised as the Maxwell "25," which is a regular model of the company.

The contest board of the American Automobile Association took the matter up at its meeting last week and decided that the Maxwell company would have to retract publicly by publishing an advertisement in one of the daily papers in each city and town in which the original advertisements had been published. In addition, the retraction will be made through the weekly and monthly class publications.

With the retraction goes a cash fine of $500. The advertisement frankly states that there is no similarity between Max well No. 25 which finished the Indianapolis race and the Maxwell "25" which is being regularly sold to the trade.

At last week's meeting of the contest board Clifford Ireland, Peoria, Ill., was appointed contest board representative for Illinois. Omar Taft was suspended by the board until January 1, 1916, for his connection with the entry of a Delage car and its failure to take part in the recent Santa Monica races.

The Detroit track, on which a cyclecar meet was held July 4, was suspended until January, 1915, this being a licensed track under the A. A. A. The suspension was for issuing sanction to the cyclecar organization which sanctioned the meet.

The Terre Haute, Ind., track, on which an unsanctioned meet was held May 23, was suspended until May 23, 1915. The Richmond, Va., and Davenport, Ia., tracks were also suspended for the same reasons; they held racemeets July 4. Their suspensions last until July 1st, 1915. The York, Pa., track received a two-year suspension for the same reason.

Ask Receiver For Tire Company.

Claiming that but half of the money paid on the capital stock can be obtained, 13 stockholders of the St. Louis Tire Co., St. Louis, Mo., have asked that the company be placed in the hands of a receiver. The capitalization is $150,000, of which only $74,200 is said to have been paid in. The company was organized a year and a half ago to manufacture pneumatic and solid tires.

Alco in Contract Litigation.

As a result of an alleged breach of contract, the Park Square Automobile Co., Boston, Mass., has entered a suit against the American Locomotive Co. in Manchester, N. H. On Saturday last a writ of attachment, attaching the Alco plant in Manchester and chattels for $100,000 was issued. The Alco company offered a bond of $90,000 for its appearance before the September term of the Superior Court in Nashua, N. H.

In its bill of complaint the Park Square company, which is a Maine corporation, alleges that the Alco company failed to live up to the terms of its contract, which gave the Park Square company as its agent exclusive rights to market Alco cars in several Massachusetts counties. It is alleged that while the contract was in force the Alco company sold 125 cars in Boston and later refused commission to its agent. The present suit is an aftermath of a similar one which remains unfinished in Boston.

Four Wheel Drive Officers Re-elected.

At the annual meeting of the stockholders of the Four Wheel Drive Auto Co., Clintonville, Wis., which was held July 14, all of the officers were re-elected. These include President Chas. Hagen and Vice-president Chas. Folkman. At the same meeting the articles of incorporation were amended increasing the Board of Directors from seven to nine members. The new members elected were A. Kuckuk, Shawano, Wis., and A. W. Priest, Appleton, Wis. A dividend of 4 per cent was declared and paid.

Du Comb Enters Barthel & Daly.

W. C. Du Comb, formerly assistant engineer of the Standard Roller Bearing Co. and engineer of the Royersford Foundry & Machine Co., has now become a part of the organization of Barthel & Daly, sole importers of Schafer ball bearings. He will act in the capacity of mechanical engineer. Mr. Du Comb will shortly make an extensive trip through the motor car trade in the interests of Schafer ball bearings.

Princess Cyclecar Now Princess Motor.

The Princess Cyclecar Co., Detroit, Mich., has filed notice of dissolution and the Princess Motor Co., recently incorporated with a capital stock of $100,000, is its successor. This concern makes the Princess light car.

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New Demonstrator Department

Dealers Who Have Received Demonstrating Models of of the New 1915 Cars—Season Getting Its Stride.

The "new demonstrator" is a big and pertinent topic as the 1915 selling season gets into swing; every dealer is interested in what every other dealer is doing; he is curious if nothing more.

For that reason Motor World has inaugurated a New Demonstrator Department. It contains the names and addresses of dealers who have received 1915 demonstrators and tells what model they have in hand. This department will be continued until the new season has got its stride and every one is supplied with a new car. The data has been furnished by the various manufacturers, to whom Motor World expresses its thanks for their cooperation.

McFarlan Motor Co., Connersville, Ind., during week ending July 1, shipped demonstrators to:

Dealer	Place.	Model.
Central State Motor Co.,	Cedar Rapids, Ia.	

Imperial Automobile Co., Jackson, Mich., during week ending July 11, shipped demonstrators to:

Dealer	Place.	Model.
La Crosse Plow Co.,	La Crosse, Wis.	39 & 37
L. R. Cold & Co.,	Des Moines, Ia.	39, 47 & 56
Eisman Auto Co.,	Cleveland, O.	39 & 39 Roadster
Imperial Motor Car Co.,	Boston, Mass.	54 & 34 Roadster
Imperial Motor Co.,	St. Louis Mo.	39 & 39 Roadster

Moon Motor Car Co., St. Louis, Mo., has shipped demonstrators to:

Dealer.	Place.	Model.
Servigny-Lalonde Co.,	Quebec, Can.	Six-50
LaPage Garage & Auto Exchange Co.,	Montreal, Can.	Six-50
Means Auto Co.,	Des Moines, Ia.	Six-50
Burd Auto Co.,	Waterloo, Ia.	Six-50
McDowell Motor Car Co.,	Kansas City, Mo.	Six-50
Moon Garage,	Auburn, N. Y.	Six-50
Moon Agency,	New Orleans, La.	Six-50
Sixth City Motor Car Co.,	Cleveland, O.	Six-50
Moon Auto Sales Co.,	Cedar Rapids, Ia.	Six-50
Tri-State Auto Co.,	Minneapolis, Minn.	Six-50
Moon Motor Car Co. of New York,	New York, N. Y.	Six-50
Moon Automobile Co.,	Chicago, Ill.	Six-50
Putnam Motor Car Co.,	Brooklyn, N. Y.	Six-50

Regal Motor Car Co., Detroit, Mich., during week ending July 11, shipped demonstrators to:

Name.	Place.	Model.
Regal Sales Organization,	Philadelphia, Pa.	D
W. L. Russell Co.,	Boston Mass.	D
Regal Auto Sales Co.,	Milwaukee, Wis.	D
C. S. Anthony,	Los Angeles, Cal.	D
Automobile Distributing Co.,	Toledo, O.	D
Anselm-Ganahl Motor Car Co.,	St. Louis, Mo.	D
Davis Automobile Co.,	Providence, R. I.	D
Peverill Motor Sales Co.,	Waterloo, Ia.	D
Moriarty Motor Co.,	Kansas City, Mo.	D
Ohio Auto Sales Co.,	Columbus, O.	D
Regal Sales Co.,	Youngstown, O.	D
J. A. Cramer,	Buffalo, N. Y.	D
Utica Regal Sales Co.,	Utica, N. Y.	D
Regal Motor Sales Co.,	Detroit, Mich.	D
Hanke Motor Car Co.,	Ft. Wayne, Ind.	D
Buhl Regal Car Co.,	Pittsburgh, Pa.	D
Ball Washburn Motor Co.,	Rochester, N. Y.	D
Webster-MacGowan, Inc.,	New York, N. Y.	D
Peterson-Keyes Auto Co.,	Indianapolis, Ind.	D
Regal Motor Co.,	Minneapolis, Minn.	D
Allen Motor Car Co.,	Norfolk, Va.	D
Frank O. Renstrom Co.,	San Francisco, Cal.	D
G. E. Holmes,	Chicago, Ill.	D
Southern Motor Car Co.,	New Orleans, La.	D
Mid-West Auto Sales Co.,	Denver, Col.	D
Eastern Motor Sales Corp.,	Richmond, Va.	D
Means Auto Co.,	Denver, Col.	D
Frank Osborn,	Anaconda, Mont.	D
Sam Herrick,	Springfield, Mo.	D
Scott Bros.,	New Cumberland, W. Va.	D

Olds Motor Works, Lansing, Mich., during week ending July 11, shipped demonstrators to:

Name.	Place.	Model.
Canton Buggy Co.,	Canton, O.	42
Hopp Motor Co.,	Chicago, Ill.	42
Washington Auto Co.,	Pittsburgh, Pa.	42
Oswego Auto Sales Co.,	Mexico, N. Y.	42
McQuigg Bros.,	San Diego, Cal.	42
Auto Sales Co.,	Baltimore, Md.	42
San Antonio Supply Co.,	San Antonio, Tex.	42
O. M. Boren,	Tyler, Tex.	42
Louis Wright,	Rome, Ga.	42
H. J. Lamar,	Macon, Ga.	42
J. W. Nikart,	South Bend, Ind.	42
Crostan Storage Battery Co.,	Toronto, Can.	42
Pollock Car Corp.,	Washington, D. C.	42
O. N. Garlock,	Des Moines, Ia.	42
George Yokum,	Port Huron, Mich.	42
Schuman Carriage Co.,	Honolulu, Hawaii	42
Heebner-Felver Motor Co.,	Lansdale, Pa.	42
H. J. Wagner,	Houtzdale, Pa.	42

King Motor car Co., Detroit, Mich., has shipped demonstrators to:

Name.	Place.	Model.
Maumee Motor Car Co.,	Toledo, O.	C
Diamond Motor Car Co., Ltd.,	Calgary, Can.	C
Central Garage,	Jacksonville, Fla.	C
August Stef,	New Orleans, La.	C
Fusilier Motor Car Co.,	Alexandria, La.	C
Schreiber-Boorse Motor Car Co.,	Milwaukee, Wis.	C
Wm. P. Barnhart & Co.,	Washington, D. C.	C
King Motor Sales Co.,	Pittsburgh, Pa.	C
Auto Inn & Exchange,	Columbus, O.	C
F. H. Bardshar,	Seattle, Wash.	C
E. S. Bostick,	Meridian, Miss.	C
Great Western Motor Sales Co.,	Quincy, Ill.	C
Guarantee Motor Car Co.,	San Antonio, Tex.	C
W. W. Bennett Motor Car Co.,	Pittsburgh, Pa.	C
Fred Klopstein,	Utica, N. Y.	C
W. J. Fitton Co.,	Indianapolis, Ind.	C
A. M. Reynolds,	Cedar Rapids, Ia.	C
J. Ralph Seidner,	Youngstown, O.	C
Dunham Motor Co.,	Cleveland, O.	C
Phelps Auto Sales Co.,	Grand Rapids, Mich.	C
E. Z. Campbell,	Mt. Pleasant, Mich.	C
King Motor Sales Co.,	Detroit, Mich.	C
Waterboro Garage Co., Ltd.,	Waterboro, S. C.	C
Wright & Mitchell,	Saskatchewan, Can.	C
H. J. Gallagher,	Darlington, Wis.	C
Crosby Garage,	Syracuse, N. Y.	C
Pontiac Motor Supply Co.,	Pontiac, Mich.	C
F. R. Wainwright,	Ft. Byron, Ill.	C
Holsman Sales Co.,	Des Moines, Ia.	C
Wm. R. Ruess,	Los Angeles, Cal.	C
Coxe Motor Sales Co.,	Birmingham, Ala.	C
Eckhardt & Hilliman,	State Centre, Ia.	C
Onhaus Automobile Co.,	Ft. Wayne, Ind.	C
Chas. H. Wakeman,	Leicestershire, N. Y.	C

Chandler Motor Car Co., Cleveland, O., during week ending July 11, shipped demonstrators to:

Name.	Place.	Model.
H. H. Edgely,	Altoona, Pa.	Touring
Cuyahoga Sales Co.,	Cleveland, O.	Touring & Roadster
Wake Auto Co.,	Raleigh, N. C.	Touring
Steam Carriage & Boiler Co.,	Oswego, N. Y.	Touring
Strong Crittenden Co.,	Rochester, N. Y.	Touring
Thomas J. Hay,	Chicago, Ill.	Touring
Vestal Motor Car Co.,	Pittsburgh, Pa.	Touring
W. B. Shaw,	Syracuse, N. Y.	Touring
F. G. Morris,	Hamilton, Ont.	Touring
Central Auto Co.,	Mobile, Ala.	Touring
Chandler Six Co.,	Kansas City, Mo.	Touring
Mobbie Motor Car Co.,	Montgomery, Ala.	Touring
Conrad Bros.,	Rochester, Pa.	Touring
Chandler Motor Car Co.,	Fort Worth, Tex.	Touring
W. H. Johnson,	Cedar Rapids, Ia.	Touring & Roadster
Chandler Motor Car Co.,	Los Angeles, Cal.	Touring
W. Va. Chandler Co.,	Elkins, W. Va.	Touring
T. H. Williams,	Weston, W. Va.	Touring
Hardin Motor Co.,	Chester, S. C.	Touring
McCreery & Raynor,	Albia, Ia.	Touring
Northwestern Auto Co.,	Minneapolis, Minn.	Touring
Sid Black,	Memphis, Tenn.	Touring
M. C. Hule Auto Co.,	Albany, Ga.	Touring
H. S. Block,	Baltimore, Md.	Touring & Runabout
Grant Bros.,	Detroit, Mich.	Touring
Marshall Wood & Bailey,	Plattsburgh, N. Y.	Touring
Mr. Stamm,	Wheeling, W. Va.	Touring
John M. Smith,	Atlanta, Ga.	Touring
Tedford Auto Co.,	Little Rock, Ark.	Touring

Bowser To Distribute Through Dealers.

By way of providing for considerably enlarged distribution of its gasolene and oil storage and pumping outfits, S. F. Bowser & Co., Ft. Wayne, Ind., is now placing in operation a new sales policy. Heretofore Bowser equipment has been distributed only through the company's branch officer. Hereafter, however, all of the company's products will be handled by dealers throughout the country. It is planned to appoint dealers in practically every city of importance and to equip the dealers with a large loose-leaf catalog containing illustrations in color and descriptions of the complete Bowser line. The book will be a large one, the illustrations being only about half size of the actual equipment.

Merkel Made Motsinger Sales Manager.

J. F. Merkel, who has long been intimately connected with the motor car industry, has become affiliated with the Motsinger Device Mfg. Co., Lafayette, Ind., in the capacity of general sales manager. He will have charge of a new sales plan which now is being perfected and under which the various Motsinger products, including carburetters, autosparkers, magnetos, and other electrical apparatus will be placed before the public in a much broader way than has been possible heretofore.

The plans made contemplate the marketing of the Motsinger carburetter through a number of service stations, which are now being established in every section of the country. It is stated that the demand for the carburetter has increased so rapidly that it has been found necessary to treble the output of the factory during the past two months.

Stearns To Double Its Output.

The F. B. Stearns Co., Cleveland, O., is about to practically double its output and for the purpose will immediately erect a new factory building affording approximately 500,000 additional square feet of floor space. The new building will be five stories in height and will be of fire-proof brick construction. Ground will be broken immediately.

Gray & Davis Sales Increase 25 Per cent.

The sales of Gray & Davis, Inc., Boston, Mass., showed an increase of approximately 25 per cent for the period January 1 to June 30. The sales amounted to approximately $2,500,000, it is understood; for the period of six months ending December 1 sales amounted to $2,000,000.

Overland's Extensive Enlargements.

More than one million square feet of available working space is to be added to the already enormous plant of the Willys-Overland Co., Toledo, O. Enlargements are now under construction. When completed the plant will consist of 64 buildings, aggregating more than 60 acres of floor space.

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MORE CARS ARE EXPORTED BUT VALUE IS DECREASED

Average Price in May $103 Less Than in May a Year Ago—Trucks Lose—11-Month Period Shows Gain—Island Possessions Buy.

More motor cars were exported in May of this year than in May of last year, but because the average price per car was less the value of the total shipments to foreign countries showed a loss. The total valuation of cars and parts for May showed a loss of $107,282, or 3 per cent.

The average value of the pleasure cars exported in May, 1913, was $1,008, and in May of this year $905, a decrease of $103, or 10 per cent. For these two comparative periods the number of pleasure cars shipped increased by 262, or 9 per cent, while the value decreased by $161,205, or 5 per cent.

Trucks sustained losses in both number and value. There were 42 fewer trucks—a loss of 30 per cent—exported and the valuation figure was less by $109,359, or 46 per cent. The average value of the trucks shipped abroad in May, 1913, was $1,676, and in May, 1914, $1,283, a decrease of $393, or 24 per cent. Parts gained by $63,282, or 12 per cent.

The total of vehicles exported during the 11 months ending with May showed an increase over the same period of the year before. Of the total the non-contiguous American possessions—Hawaii, Porto Rico, the Philippines and Alaska—took a considerable portion. The statistics in detail are shown by tables which appear on this page.

Loss Recorded in Tire Exports.

America's tire business with foreign countries suffered a loss of $28,071, or 7 per cent during May, as compared with that month of a year ago. During the 11-month period ending with May a loss also was shown, the value of the tires shipped abroad being less by $460,006, or 13 per cent.

Canada, America's best tire customer a year ago, decreased its purchases by $37,681, or 25 per cent, but England made a substantial gain, paying $15,633, or 12 per cent more than in May, 1913. The figures in detail appear in an appended table.

Imports of Cars Decline in May and Average Value Becomes About $1,000.

Imports of foreign cars fell off decidedly in May. The drop in number amounted to 24 cars, or 57 per cent, while the value of the imported vehicles decreased by $94,825, or 83 per cent. The average price paid in May was about $1,000.

During the 11 months ending with May, the year 1914 shows a further marked decrease in imports. The shrinkage in the number imported was 426 cars, or 65 per cent, while the valuation fell off by $1,065,117, or 64 per cent. Parts, however, gained $104,830, or 381 per cent. The details are shown in the appended table.

Minor Business Troubles.

George P. Dowling, who operated a garage and salesrooms in Grand Rapids, Mich., on North Ilnia street, has filed a petition in bankruptcy. His liabilities are $8,971.89 and his assets $3,936.54.

The Enterprise Vulcanizing Co., 635 East Broadway, Louisville, Ky., has been adjudged a bankrupt. Its liabilities total $4,030.61 and its assets $1,753.42. The principal creditors are the T. J. Cooper Rubber Co., Cincinnati, O., $1,055.44, and John J. Moran, secretary-treasurer of the Enterprise, $1,000 for salary.

TIRE EXPORTS	May 1913 Value	May 1914 Value	Eleven Months Ending May 1913 Value	Eleven Months Ending May 1914 Value
Belgium	.....	$301	$385,450	$15,730
Germany	$37,317	20,341	373,161	125,595
England	132,879	148,512	981,631	1,310,930
Canada	150,046	112,365	1,166,101	792,961
Mexico	16,282	3,483	182,280	109,371
Philippine Islands	13,874	5,808	82,879	127,165
Other countries	46,418	77,935	340,613	570,337
Total	$396,816	$368,745	$3,512,095	$3,052,089

CAR IMPORTS	May 1913 Number	May 1913 Value	May 1914 Number	May 1914 Value	Eleven Months Ending May 1913 Number	Eleven Months Ending May 1913 Value	Eleven Months Ending May 1914 Number	Eleven Months Ending May 1914 Value
France	17	$49,515	7	$9,971	337	$799,099	124	$287,351
Germany	8	21,154	2	2,559	90	235,525	19	43,387
Italy	9	23,615	3	3,407	112	198,782	50	73,473
United Kingdom	3	6,300	2	1,485	77	216,632	40	115,042
Other countries	5	13,153	4	1,490	88	203,825	45	69,192
Total cars	42	$113,737	18	$18,912	704	$1,653,864	278	$588,747
Parts (except tires)	..	26,946	..	131,776	...	251,831	...	715,344
Total cars and parts	..	$140,683	..	$150,688	...	$1,905,695	...	$1,304,091

CAR EXPORTS.	May 1913 Number	May 1913 Value	May 1914 Number	May 1914 Value	Eleven Months Ending May 1913 Number	Eleven Months Ending May 1913 Value	Eleven Months Ending May 1914 Number	Eleven Months Ending May 1914 Value
France	108	$72,149	275	$146,785	753	$571,049	1,268	$835,256
Germany	192	145,799	206	162,552	692	632,247	1,391	1,003,000
Italy	5	12,506	33	25,846	276	247,863	326	228,894
United Kingdom	473	354,686	663	556,753	3,593	2,737,438	6,850	5,532,533
Other Europe	294	236,447	445	356,091	1,601	1,368,654	2,686	2,153,917
Canada	862	1,255,771	764	941,345	6,829	8,636,880	4,243	5,259,072
Mexico	6	5,110	4	3,601	265	496,981	164	252,098
West Indies and Bermuda	45	47,591	34	31,374	415	430,106	491	468,467
South America	213	248,707	180	169,107	2,650	2,978,020	1,909	1,888,529
British Oceania	234	220,372	466	416,259	2,744	2,582,239	3,819	3,325,902
Asia and other Oceania	282	272,174	118	124,910	3,025	1,944,287	1,993	1,927,157
Other countries	322	283,883	68	50,002	1,288	1,196,018	1,860	1,628,610
Total cars	3,036	$3,155,189	3,256	$2,984,625	23,132	$23,821,782	27,018	$24,583,435
Commercial	141	236,383	99	127,024	878	1,569,750	694	1,061,354
Passenger	2,895	2,918,806	3,157	2,857,601	22,254	22,252,032	26,324	23,522,081
Parts *	...	537,511	...	600,793	...	4,690,983	...	6,150,264
Total cars and parts *	...	$3,692,700	...	$3,585,418	...	$28,512,765	...	$30,733,699
DETAILS OF EXPORTS TO THE NON-CONTIGUOUS AMERICAN POSSESSIONS.								
Hawaii—Cars	33	$64,029	58	$52,694	664	$1,111,753	638	$782,259
Parts *	...	8,675	...	5,696	...	101,468	...	78,773
Porto Rico—Cars	20	25,018	25	20,590	307	381,711	272	302,899
Parts *	...	8,537	...	8,186	...	86,699	...	65,569
Philippines—Cars	56	75,095	22	30,313	466	562,930	610	716,334
Parts *	...	2,842	...	1,937	...	46,239	...	63,328
Alaska—Cars	1	600	10	12,704	8	10,850	40	47,193
Parts *	...	125	...	3,280	...	2,089	...	6,755
Total cars	110	$164,742	115	$116,301	1,445	$2,067,244	1,560	$1,848,685
Total parts *	...	20,179	...	19,099	...	236,495	...	214,425
Total cars and Parts *	...	$184,921	...	$135,409	...	$2,303,739	...	$2,063,110

* Does not include engines and tires.

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MOTOR WORLD

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The Tactless Seller

"I WAITED NEARLY TEN MINUTES IN THE SALESROOM LOOKING OVER NEARLY ALL OF THE CARS ON THE FLOOR BEFORE A SALESMAN APPROACHED ME, AND THEN A SALESMAN CAME UP SOLELY BECAUSE THE MANAGER ENTERED AND BROUGHT TO AN END THE CONVERSATION BETWEEN TWO SALESMEN AND OTHERS IN THE CLERICAL STAFF OF THE PLACE."

This simple, open, frank statement came from a private individual in the market for a car and who visited a dozen of the leading agencies in the city in which he lived.

This statement represents conditions that may be found every day in the year, not in one city but in a score of cities, and not in one agency but in practically one-half of them and sometimes in more.

"Are You Interested?"

Among motor car salesmen there seems a hopeless lack of knowledge of what to do with a customer and it is the minority of salesmen who know how to take hold of a prospect when he or she enters the salesroom. Many salesmen are helpless and ask the most absurd questions, a favorite one being, "Are you interested in motor cars?" or, "Are you interested in this car?"

Had such a salesman paused but a single second to reflect calmly he might have asked himself the question, "What does the person want when he or she enters the salesroom, if he is not interested in cars or in that particular one?"

But the inattentive salesman is a little worse than that brand which wants to know whether you are interested in the car or not. The one that fails to meet you after you enter the place, and leaves you to look over the cars and finally puts you to the extremity of asking if a salesman will wait on you, belongs in a class all by himself. He is the poorest possible investment to his employer. Patrons enter a place of business for attention and generally to get information.

80 Per Cent Below Par

There is on record the experience of a traveling representative of a large motor car manufacturer, who made a complete circuit of the agencies, the first he had made. In each one he played the role of the prospective customer, and he reported that not in 20 per cent of the places was he handled as a customer should be handled. In other words, in 80 per cent or over of the salesrooms the salesmen were not versed in their work.

In one place they lacked the proper address of the sterling salesman.

In another place they failed in sizing up the customer and did not gain a knowledge of the exact ground on which the customer stood.

It was rarely that the real salesman was reached.

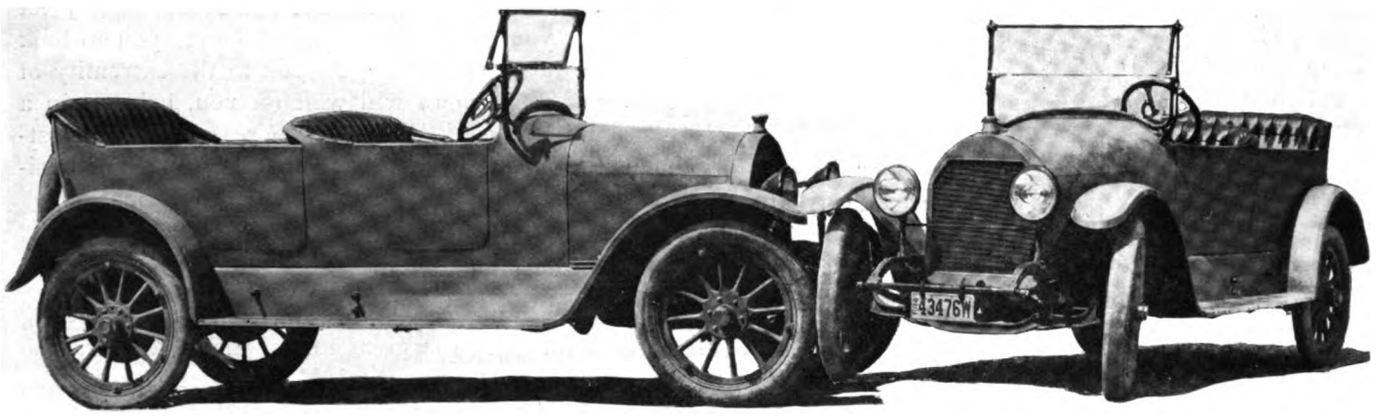
The Lazy Druggist

One of our largest manufacturers recently had an experience which taught him his lesson in salesmanship and which he later saw was applied to every branch and agency selling his make of car. He entered a drug store near his home, one which he had not previously been in the habit of patronizing. After entering he waited for the clerks to come out from the prescription department in the rear. He stamped his foot once or twice to attract their attention and finally when they came out he asked if they cared to do business or not.

The last stage of the situation was that he left the place without making a purchase and found another druggist a few blocks away who made a feature of quick and courteous service. Prompt service won the trade and has retained it.

OTHER EXAMPLES BY THE SCORE COULD BE CITED. IT IS NOT NECESSARY. MR. BRANCH MANAGER, OR MR. MANAGER OF THE SALESROOM, LOOK TO THE ADDRESS AND TACTICS OF YOUR SALESMEN. YOU MAY BE LOSING SALES EACH WEEK BECAUSE OF POOR SALESMANSHIP, BECAUSE OF LACK OF PROMPT ATTENTION TO PATRONS ENTERING YOUR PLACE, BECAUSE OF YOUR SALESMEN NOT USING THE PROPER ARGUMENTS TO SELL YOUR CAR, AND BECAUSE OF THE SALESMEN NOT GETTING ON SOME COMMON GROUND OF UNDERSTANDING WITH THE CUSTOMER. THE SALESMAN MUST STUDY HIS CUSTOMER, AND IF HE IS NOT CAPABLE OF DOING THIS HE IS A LOSS RATHER THAN A GAIN.

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NEW JEFFERY CHESTERFIELD SIX BUILT ON EUROPEAN LINES AND WORM DRIVEN

Jeffery Brings Out Worm Driven Six

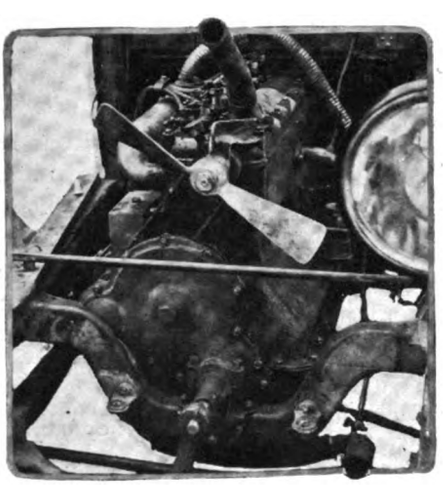
Has Four-speed Gearset, High-speed Engine and Cantilever Rear Springs.

A car that combines a number of features not usually found in American cars just has been brought out by the Thos. B. Jeffery Co., Kenosha, Wis., in the Chesterfield light six, a car with 3 x 5 high-speed motor, worm drive, cantilever rear springs, Bijur electric lighting and starting system, and selling for $1,650 with either roadster or 5-passenger touring body and with full equipment. The wheelbase is 122 inches and the tires 33 x 4 front and rear. The makers give the weight of the car as 2,850 pounds.

The equipment includes a one-man top with cover and Collins side curtains. windshield, Klaxet horn, Folberths power air pump, Stewart speedometer, combined speedometer and trouble lamp with cable on spring reel, English vanity case, headlight dimmer, tools, jack, etc.

Designed for high speed, the motor has been run up to between 2,400 and 2,500 revolutions per minute, developing a maximum of about 42 horsepower, though the S. A. E. rating is but 21.6 horsepower. The cylinders are of the L-head type, block cast and in one piece with the upper half of the crankcase, the lower half being an aluminum casting. The tops of the cylinders are open and a single bolted-on plate effects the closure and carries the top water connection.

Large Rich tungsten steel valves are used, to permit high speed, and the reciprocating parts are exceptionally light. But three gears are used in the timing drive, and these have helically cut teeth to ensure quiet running. The cooling water is pump circulated through a honeycomb radiator and the fan is of the two-blade aviation type carried on a one-piece bracket bolted to the casting which forms the cylinder head. An eccentric mounting permits taking up slack in the fan belt. Fuel is fed from the rearward tank by the Stewart-Warner vacuum system.

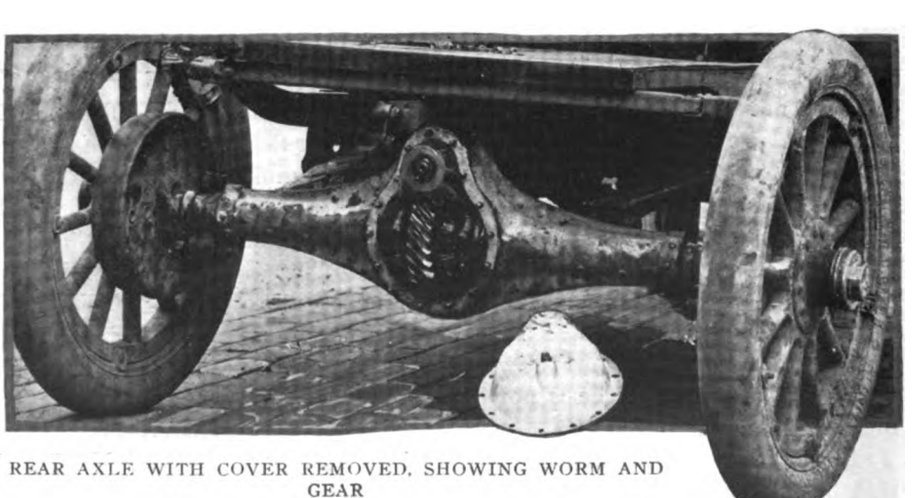


MOTOR, SHOWING FAN MOUNTING

Lubrication is by splash with gravity feed. Oil is pumped from a reservoir under the crankcase through a tube extending the entire length of the case, with lateral branches leading to the main bearings and the camshaft bearings, the overflow dropping into the constant level troughs under the connecting rods. Tubular scoops carry the oil direct to the crankpins.

A Bosch independent ignition equipment is installed, and the Bosch name is on the plugs and cables as well as the magneto. The plugs are located over the valves on the right side.

The engine is started by a Bijur motor mounted on the left side, having a pinion sliding on a squared shaft which meshes with teeth in the flywheel rim. Pressing the starting pedal causes the motor to turn slowly at first until the pinion is in mesh, when the full current is turned on. It is stated that the engine turns over at 165 revolutions per minute under the full power of the starter. The



REAR AXLE WITH COVER REMOVED, SHOWING WORM AND GEAR

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lighting generator is separate from the starting motor and is mounted on the right side and driven from the timing gears.

The power transmission elements consist of a three-plate dry disk clutch, a leather disk universal joint between clutch and gearset, a four-speed gearset, straight-line shaft, worm drive and floating shafts in the axle. While leather universals were used in the 1914 Jeffery cars, the joint in the new model is of different design. The leather disks used are 6 inches in diameter and 3/16 thick. The bolts which clamp the disks to the arms are extended forward and carry, on spring mountings, a clutch brake.

MAIN POINTS OF JEFFERY CHESTERFIELD SIX

Model	Chesterfield
Price, touring or roadster	$1,650
Drive	Worm
Make of motor	Jeffery
Number of cylinders	6
Shape	L-head
How cast	Block
Bore	3
Stroke	5
S. A. E. rating	21.6
Magneto	Bosch
Starting-lighting	Bijur
Clutch	3-plate dry disk
Wheelbase	122
Wheels	Wood
Tires	33 x 4
Steering	Left
Control	Center
Type of rear axle	Floating

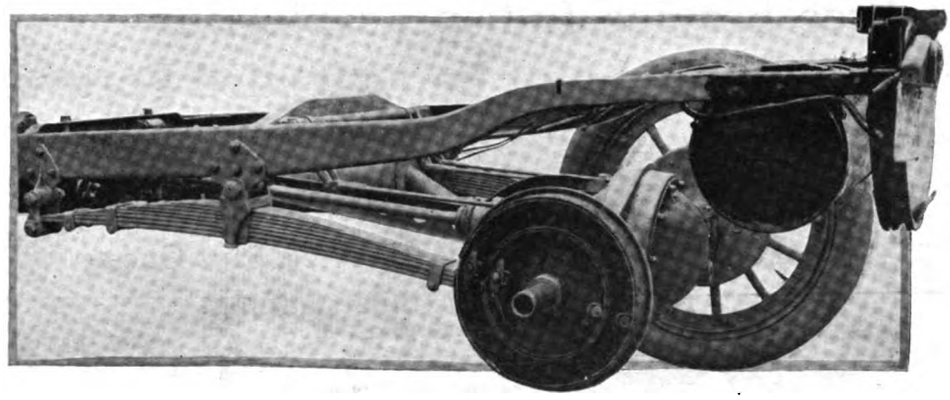
Equipment: One-man top with Collins curtains, Klaxet horn, power tire pump, Stewart speedometer, combined trouble and speedometer light on spring reel, English vanity case, tools, jack, etc.

When the clutch is released it moves back against the brake and its spinning is checked.

Tubular construction is used in the propeller shaft, which is fitted with a universal joint at each end; the shaft is both light and rigid and runs unenclosed. There are no torque or radius rods, the drive being taken through the springs.

The worm is of the overhung type, which affords maximum road clearance, and is reached through a large opening at the rear of the axle housing with the usual cover. The chrome nickel steel floating shafts run in imported annular ball bearings. The reduction through the worm drive is 4.5 to 1; direct drive is on third speed, the overstep fourth having a total reduction of 3.75 to 1. The expanding and contracting brakes act on drums 14 x 2.

The cantilever rear springs are mounted directly under the side members of the frame with the front ends shackled, the middles pivoted to brackets under the frames and the rear ends secured to the rear axle housing. This arrangement brings the stresses in a vertical line and greatly lessens the tendency to twist and side sway. The rear springs are 48 x 2½ and the front springs, which are of conventional design, 37 x 2. The steering gear is a Gemmer, worm type, and the wheel is 18 inches in diameter and corrugated.



JEFFERY CANTILEVER SPRING SUSPENSION AND TANK LOCATION

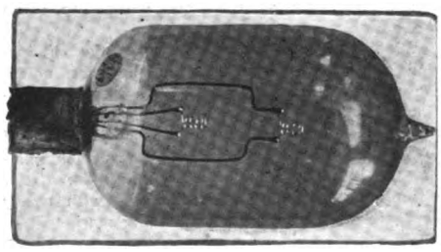
Both models are regularly fitted with wood wheels which carry straight-side tires on demountable rims, which the makers state are of a type that is free from squeaking.

The lighting system includes a Willard storage battery which carries the lamp load until the engine is running at a speed corresponding with a road speed of 7 or 8 miles an hour, when the automatic regulator cuts the generator into the circuit. The generator automatically gives the battery a tapered charge and regulates its output to suit the work at all times.

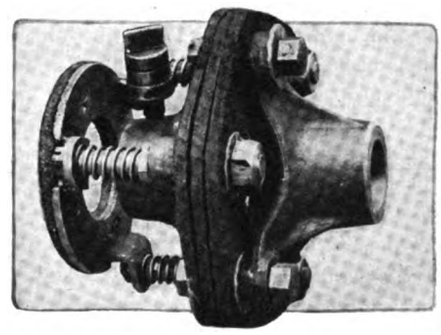
The lighting control is effected by a combination switch that gives six degrees of brilliance in the headlights; there are no side lights. The headlights have bulbs with double filaments. One filament is directly in the focal point and gives the maximum illumination, while the second filament is about an inch forward of the focal point and gives a bright but diffused light that is satisfactory under most conditions. Still dimmer effects can be had, if required, by switch manipulation.

Bodies are of the streamline type and have crowned fenders; running-boards are clear and the body lines smooth. That there is ample room for passengers is indicated by the fact that in the 5-passenger machine there is sufficient space to accommodate two extra seats, which are supplied at a slight advance in cost.

One of the unusual features of the car is the Empico speedometer drive, in which small gears and shafts, passing through one of the steering knuckles and so completely enclosed, transmit the drive without outside moving parts. The Klaxet horn is mounted under the bonnet.



DOUBLE-FILAMENT HEADLIGHT BULB



UNIVERSAL AND CLUTCH BRAKE

On the road the car is extremely quiet in action and rides with unusual smoothness over rough spots, owing to the efficiency of the cantilever springs. The combination of six-cylinder engine, leather universal and worm drive produces a soft effect in the drive that is distinctly pleasing, and assists not a little in making the car comfortable.

St. Louis Show Week of Oct. 4.

The annual Fall show of the Automobile Manufacturers' and Dealers' Association, St. Louis, Mo., will be held during the week of October 4, at Forest Park Highlands. This was decided by the show committee at a meeting held last week; at the same time a price of 40 cents a square foot for exhibition space was decided upon.

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Free Service Indispensable But Should Not Be Extended Forever

Metropolitan Motor Truck Men Urge Standardization of Service—Cut Price and Service, Says One—Have Thorough Understanding.

That service to the purchaser of a commercial motor vehicle is indispensable, but that it is not fair that such service be extended gratis for an indefinite period, was the sentiment at the last meeting of the Motor Truck Club, which was held on Wednesday evening, July 15.

More than 40 keenly-interested members and guests were present. Four papers, dealing with the question of service from the standpoint of the manufacturer, dealer and the user of the truck, were read.

Prior to the reading of the papers, President George H. Duck introduced the discussion by a strong plea for standardization of service as one of the most important of the tasks now before the motor truck industry. He decried the lethargy of the majority of those interested in the development of the business, and urged that manufacturers and dealers, and even owners, get together and discuss the question with a view to definite action and resolve.

Free Service Should Be Limited.

It was brought out in the discussion following the reading of the papers that unlimited free service is abhorred almost universally. It was agreed that the workmanship and material guarantee should be rigidly adhered to, and some of those present even favored guaranteeing the vehicle for life in these respects; but with regard to repairs, that might or might not be attributable to mechanical defects, service should be strictly limited.

Of the papers that were read not least important was one whose author preferred to remain unknown. He suggested in brief that the solution of the service problem lay in reducing the initial cost of the vehicle to purchasers, by the amount which the manufacturer expected to outlay for subsequent service. He stated in part:

As I recall, about the year 1908 started the subject of service in connection with the purchase of motor trucks. None of us had a very good understanding as to what was intended, but it sounded reasonable and attractive. We were led to believe, as we still are by many of the sales representatives of motor truck concerns of this city, that once we had placed our order, all would be taken care of, and it certainly made an impression. It still does among those poor fools who are investing in their first truck—who are not carrying on the necessary investigation to determine whether they are dealing with the usual fly-by-night agency or a substantial concern.

It may be taken as a regular and infallible rule that the companies who talk the most about service today in New York are the ones who have the least intention of giving it or are able to give it if the intention was there. The subject of service has become such a pest that I am often inclined to immediately order out of my office the salesman of a motor truck who starts to make the matter one of the important items of his conversation. I know as well as most of those who have used motor trucks for any length of time that the manufacturers or agents can not give what they claim to be able to give and last any length of time; failure must result and does result, as may be apparent from an investigation of the truck business of this city.

Believes Present Figures Will Be Cut.

I am perfectly aware from my past experience that the manufacturer and the agent must charge the prices for trucks that they do today if they are to in any way furnish what they agree to do, but in the majority of cases do no when the proper time comes. From a business point of view, it would be far better to all concerned if the manufacturer would make his price contingent upon a proper determination of cost with a reasonable margin of profit and place the responsibility of the operation of the vehicle up to the owner.

Of course, this is not to be advocated just so long as the manufacturer and the agent continue the present prices for their vehicles, which is far above what is reasonable, and just so long as they continue with their present policy, we as users are fools if we do not work them to the limit for free demonstrations, free replacement of parts, overhauls, adjustments, and in fact in every way that lies within our power.

I am of the opinion that there will be a time not far distant when the truck manufacturer will be willing to market his vehicle at a figure well within reason, but the present price, which to my mind includes so many items we as purchasers might better assume ourselves, necessitates our working the manufacturer and agent as "good things" as long as they are willing to stand the gaff.

While I do not exactly advocate the elimination of service as practised in the past, unless the market value of machines is reduced proportionately, for I expect to continue to play the dealer and manufacturer as a good thing, I would like to see a reduction of price, eliminating the so-called service, and placing the matter up to the purchaser, as is the case with nearly every form of machinery now being marketed.

W. L. Day, general manager of the General Motors Truck Co., took for the basis of his paper the necessity for service as viewed by the manufacturer. He said in part:

We are all agreed, no doubt, that no business enterprise depending on the public for support can long exist without service. We are also, no doubt, all agreed that in the motor truck field the buyers of trucks have been led to expect too much "free service."

We all know, whether willing to admit it or not, that the word "service" in connection with the sale of motor trucks has been very much abused.

In our desire to keep all of the other two hundred competitors out of the field we all tried to make good the foolish promises of our salesmen, and the watchword seemed to be "get the business—hang the profits." Such extravagant practices have made the motor truck business unprofitable, in spite of the fact that the public has insisted that motor trucks cost too much money.

Best Service Comes Before Sales.

The selling of motor trucks is a merchandising problem not unlike the selling of any other equipment. If this be true, why shouldn't they be sold on the same basis and the same kind of service be furnished the customer?

We demand good service from whomsoever we buy anything, but we all know that although we may get the service, we are paying for it, unless, perchance, we buy a motor truck and then we expect the factory and sales force to give us their services gratis.

A good motor truck adapted to the service for which it is bought will make money for its owner if it is properly handled.

In the selling of motor trucks the first service to a prospective customer should be a pre-sale service. The customer's transportation problem should be thoroughly and competently analyzed. It should be determined whether the prospect can use trucks advantageously in his business. If he can, he should be advised as to the kind and size best adapted to his service.

The salesman whose desire for an order leads him to persuade the customer to make a wrong installation, to buy an electric when a gasolene truck would serve him better, or to buy two one-ton trucks when one two-ton truck would do his work, not only injures the business of his own company, but damages the truck business in general.

It is the duty of the manufacturer to make provision for prompt service in the way of repair parts, to provide the customer with an illustrated parts list, so parts can be ordered intelligently, but if a part is broken through the carelessness or recklessness of the driver, while the customer should be able to get the repairs promptly, he should pay the expenses of making the repairs.

Hard and Fast Rule Impracticable.

There are, of course, numerous ways in which the factory representative or the dealer can be of service to the purchaser. That somewhat intangible or indefinite service, but nevertheless valuable cooperation with the owner; the offering of suggestions and advice that will assist the owner to get the best and most profitable service out of his truck.

We do not believe that in any line of business in which the public is served that a hard and fast rule can be laid down as to just what "service" should be given and what withheld, excepting that we do believe that it is wrong to lead a purchaser of a truck to believe that he will virtually be relieved of all responsibility of maintaining his truck, and that is what too many of us were guilty of doing in the earlier days of the truck.

The man who buys an outfit of horses and wagons for his haulage service expects to assume all responsibility in connection with the use of same.

There may be a temporary advertising value

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in promising a customer what virtually amounts to a perpetual chaperoning of his truck, with a skilled mechanic at call day or night, or an extra service truck to be had on demand in case of a breakdown, but it can be only temporary, for such promises cannot be lived up to if much business is secured, and here also the reaction is detrimental not only to the individual manufacturer but to the entire trade.

The more the purchaser of a truck assumes the responsibility of its care, the better satisfaction he will get out of his purchase and the better "booster" he will be for the manufacturer whose truck he uses and for the use of trucks in general.

Thorough Understanding Important.

J. W. Perry, manager of the New York branch of the Lippard-Stewart Co., took as the topic for his paper the view of the dealer regarding service. He said in part as follows:

This much-mooted question has been the cause of much ill-feeling between dealer and manufacturer and dealer and customer. Much of it has arisen from the dealer's desire to effect a sale, and in this endeavor he is at times prone to offer too much to the customer, especially to a first purchaser, or a man who has never used a motor truck.

After a hard siege and meeting the usual fair and unfair competition, all of which have placed the prospect in a frame of mind where he himself scarcely knows what he wants, the dealer, sometimes, in his enthusiasm, promises more than he should, hoping that he may never be called upon to "make good," or, if he should be called upon, to placate or stall the purchaser with some plausible story.

It happens, however, that some purchasers are wise enough to have a very thorough understanding with the dealer before signing his contract, and in that event the dealer must make good, and here is where he falls back on the factory for help. In such cases the dealer is not entitled to help and should be left to reap the reward of his own indiscretion.

To remedy or prevent any such condition arising, there should be a very thorough understanding between buyer and seller as to what he is entitled to and what he may expect, and this understanding incorporated in his purchase contract, as far as possible.

When Service Should Be Given.

Experience shows that each car sold requires a certain amount of supervision and tuning-up for the first few months or year, which is generally furnished in the interests of the industry and the particular car just sold. There is a danger of sinning on the wrong side and giving too much supervision, which eventually leads the customer to think that the car is not as good as it should be, or leaves him under the impression that the dealer will make good anything that goes wrong, whether such wrong is due to faulty construction or to careless handling.

Under any condition the purchaser is entitled to prompt service, and this should be given him and he should be made to pay for any damage due to his negligence of misuse. There are times, however, when matters come up for adjustment where claim is quite debatable.

A superficial examination of the complaints of users leads us back to the source of most of the trouble, and this is caused by the manufacturer himself. He (the manufacturer), in his endeavor to place agencies and incidentally securing orders for demonstrators from such agents, is likely to look up the financial standing of such agent rather than his integrity.

He figures that every agent secured means two or three cars sold, and a volume of business seems more important to some of them than the selection of able and competent representation. Under these conditions we find many agencies who, in their endeavor to make sales, by any or all means, will promise more than they should. The manufacturer sits back and smiles—for the more sales are made the better for him, as he sells to the agent for cash and ships against bill of lading.

Members of the Board of Trade give a 90 day guarantee only, whereas the agency must give one year, if he is to meet competition. When the 90 days expire and claim is afterward made, the manufacturer calmly points to his guarantee and says "nothing doing."

The agent then must necessarily make good to his client, and in this way large inroads are made in his profits. The remedy should be that a manufacturer should just seek for agents men who understand the motor truck business and who are known to be fair and honest first and financially capable next. When such an agency has been placed, the manufacturer should back him up to the limit, otherwise the reputation of his product will suffer in the end.

My contention is that a defective part should be furnished free of charge—and labor of putting the same in place should also be free to the customer. Now comes the interesting question of who is to pay for all this? The manufacturer, unquestionably. If he makes all his parts in his own factory, the return of the defective part to him is of value insomuch as it shows him wherein he is at fault and enables him to remedy the evil in his future production. If the defect is in the material, he has recourse on the producer of the raw material. On the other hand, if the so-called manufacturer is an "assembler" only, he loses nothing and recovers fully from the house furnishing the parts. So that the loss in full replacement of parts is frequently an asset in assisting the manufacturer to determine where parts are weak and such discovery is not always possible in the usual factory pre-sale road test.

Making the Agent the Goat.

The labor of putting such parts in place for the user should also be charged to the manufacturer. The agency did not build the truck, nor are they supposed to be mechanics, although most of them maintain a repair-shop. They sell the truck as agents and endorse the guarantee of the manufacturer. The purchaser knows the agent only, in many cases does not even know where the truck is built. The purchaser then holds the agent responsible and he must make good. Attention to the customer as outlined above constitutes, in my mind, "good service"; anything short of this is not service.

The agents' duty is to sell trucks and see that they give satisfaction, and this he can only do with the cooperation of the factory. The more trucks he sells, with good service, the more the reputation of that particular make will be advanced. This is important to the manufacturer, for if he changes his agency the successor may inherit the evil reputation created by his predecessor.

To sum up, I still maintain that if manufacturers used more discrimination in their selection of agencies and when they had found the right one to back his judgment, there would be more sales made and a better feeling created between all concerned. As matters now exist there must be a "goat," and he is the agent.

Rates For Current Show Big Drop.

The reductions in the rates charged for electricity by the New York Edison Co. during the past three years may be taken as conclusive evidence of the increasing use of electric vehicles. Prior to July 1, 1911, the rate averaged approximately 3½ cents per kilowatt-hour. Between July 1, 1911, and May 1, 1914, the rate was reduced to less than 3¼ cents, and on May 1, 1914, the minimum rate, based upon the consumption of 50,000 kilowatt-hours monthly, was lowered to 2 cents a kilowatt-hour. The new rates, which are as follows, are upon a minimum monthly bill of $25: The first 2,500 kilowatt-hours monthly at 5 cents; next 2,500 kilowatt-hours monthly at 4 cents; next 5,000 kilowatt-hours monthly at 3 cents; next 20,000 kilowatt-hours monthly at 2½ cents; next 20,000 kilowatt hours monthly at 2¼ cents; over 50,000, 2 cents.

Hubs Go Cheaper in Michigan.

The Michigan Interstate Commerce Commission has ruled that motor car hubs are subject to fourth-class rating instead of second- and third-class rating which the carriers have applied in the past. This means a considerable reduction in transportation charges, as fourth-class rates, for instance, from Detroit to Lansing are now 11 cents for less than carload lots as against 21 cents second- and third-class rating. While in carload lots the new rate is 8½ cents instead of 17 cents. No decision has been rendered concerning wheels and brake-drums.

High Salaries for Motoring Postmen.

The Postmaster General has placed a premium upon those of his mail carriers who use motor cars. He has succeeded in convincing the House Committee of the greater value of those who use motor cars, and as a result, motoring rural carriers are to receive annual salaries of $1,800 instead of $1,200. It has been pointed out that the average motor car mail carrier covers 50 miles per day, whereas the other rural carriers cover only half this distance.

Motor Car Securities Quotations.

	July 18, 1913 Bid	Asked	July 18, 1913 Bid	Asked
Ajax-Grieb Rubber Co., com.	145	160	220	..
Ajax-Grieb Rubber Co., pfd.	94	100	100	..
Aluminum Castings, pfd.	97	100	98	100
Chalmers Motor Co., com.	110	116	100	103
Chalmers Motor Co., pfd.	98	102	94	96
Firestone Tire & Rubber Co., com.	270	280	310	315
Firestone Tire & Rubber Co., pfd.	103	105	108	110
Garford Co., pfd.	85	95	75	85
General Motors Co., com.	27⅝	30¼	91	92½
General Motors Co., pfd.	73	73⅞	91½	93
B. F. Goodrich Co., com.	28	29	25	25¾
B. F. Goodrich Co., pfd.	90⅞	92¾	88	90
Goodyear Tire & Rubber Co., com.	330	337	170	175
Goodyear Tire & Rubber Co., pfd.	98½	100	97	98½
Gray & Davis, Inc., pfd.	..	..	98	102½
International Motor Co., com.	3	5	..	3
International Motor Co., pfd.	15	25	3	9
Kelly-Springfield Tire Co., com.	..	..	54	56
Kelly-Springfield Tire Co., 1st pfd.	..	..	76	80
Kelly-Springfield Tire Co., 2nd pfd.	..	..	94	100
Lozier Motor Co., com.	15	20	..	18
Lozier Motor Co., pfd.	..	90	..	41
Maxwell Motor Co., com.	2¾	3¼	14¼	14¾
Maxwell Motor Co., 1st pfd.	24	26	43½	44½
Maxwell Motor Co., 2nd pfd.	6	8	17	18½
Miller Rubber Co.	133	137	138	146
Packard Motor Car Co., com.	..	..	103	112
Packard Motor Car Co., pfd.	98	101	97	100
Peerless Motor Car Co., com.	45	50	10	17
Peerless Motor Car Co., pfd.	..	96	..	50
Pope Mfg. Co., com.	7	10	..	1
Pope Mfg. Co., pfd.	27	33	..	3
Portage Rubber Co., com.	..	45	..	30
Portage Rubber Co., pfd.	..	90	..	90
Reo Motor Truck Co.	10	11¼	11½	12½
Reo Motor Car Co.	19	21	18½	19½
Stewart-Warner Spdr. corp., com.	..	..	51	52
Stewart-Warner Spdr. corp., pfd.	..	..	99	101
Studebaker Corp., com.	22½	25	30	32
Studebaker Corp., pfd.	81¾	87	82½	86
Swinehart Tire & Rubber Co.	85	88	85	87
U. S. Rubber Co., com.	58	*58¾	56	57
U. S. Rubber Co., pfd.	102	103½	101	102
White Co., pfd.	102	104	107	110
Willys-Overland Co., com.	57½	62	89	90
Willys-Overland Co., pfd.	85	90	93½	95

* Ex-dividend.

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EXIDE WEST SIDE GARAGE FOR ELECTRICS IN WHICH ALL CARS ARE ON GROUND FLOOR

Exide Garage for Electric Commercial Cars

Every Facility Provided for Handling Battery Driven Machines Only—All Work Thoroughly Systematized.

By Howard Greene

Mechanically, the electric vehicle requires the same kind of attention that the gasolene car needs—that is to say, the steering gear, springs, chains, wheel bearings, tires, and so on, are subject to the same general conditions and are cared for in the same way. But when it comes to the motive power system—the battery and motor and the electrical control system—the case is different. The machine requires attention from men trained in electrical work, which differs very considerably from the work in an establishment devoted to the care of gasolene cars.

This was fully considered by the Exide Battery Depots, Inc., in establishing its garage at 527-541 West 23rd street, New York—a garage designed with the battery vehicle in view and the battery vehicle only. It is the second Exide garage in New York, the first, which has been in operation for eight years and is more than comfortably filled with commercial vehicles, being at 141-155 East 25th street.

While every facility has been installed for handling every make of storage battery on the market, and, moreover, for doing the work exactly as is recommended by the manufacturers, the activities of the garage are not confined to battery work, for regular garage service can be given, and is regularly given, to the whole vehicle. The place is never closed; a car can be taken in or out at any hour of the day or night, and there will be properly qualified men on hand to do all that may be required.

NAME John Doe INSPECTION REPORT Jan. 16 1914

Chains	worn	Motor Pinion	OK
Sprockets	worn	Diff. Gear	OK
Springs	OK	Motor Chain	adjust
Spring Links	worn	Diff. Shaft	loose
Spring Bolts	worn	Grease Cups	OK
Brakes	OK	Tires	OK
Steering Forks	loose	Lamps	OK
Steering Pins	OK	Bell	OK
Sector and Pinion	OK	Panels	OK
Cont. Fingers	adjust + replace	Paint	OK
Cont. Blocks	worn	Wiring and Misc.	OK
Motor	OK	INSPECTOR H. Green	

Form 1100—1-14—1M

FIG. 1—CARS ARE INSPECTED MONTHLY AND CONDITION REPORTED ON THIS FORM, WHICH DOES NOT INCLUDE BATTERY WORK

Emergency Car Is Always Ready.

The garage goes further, and reaches out beyond its own doors to render assistance when needed. An emergency car is kept on hand ready for instant service. A telephone message from any point in the city will bring the machine with a competent man to do whatever work may be required. There is a fixed rate of charges for this sort of service. A flat charge of 25 cents a mile is made for the emergency truck and 75 cents an hour for the time of the mechanic who goes with it; a minimum charge of $1 is fixed.

To cite an instance, if the emergency truck had a run of two miles to reach the disabled vehicle and the mechanic was away from the home garage for one hour, there would be a charge of $1 for the four miles covered during the round trip and 75 cents for the mechanic's time—$1.75 in all. A disabled car will be towed to any desired place or to the Exide garage, at the option of its driver or owner.

The depot gives regular garage ser-

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vice at fixed rates to electric cars. Complete charge will be taken of a machine and it will be washed, cleaned and polished, the mechanism cleaned, oiled and greased and kept charged, at the following rates:

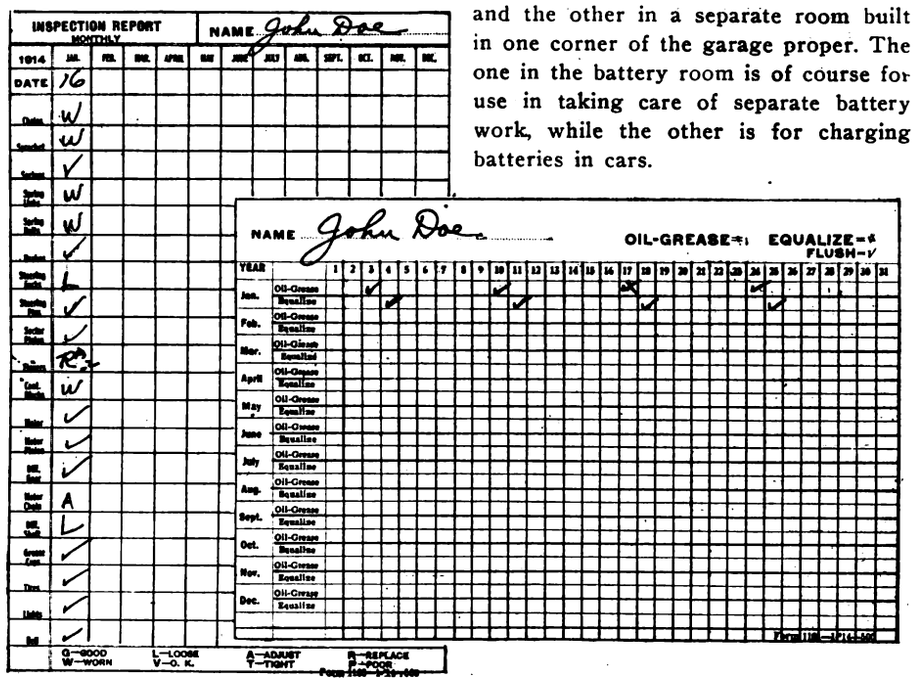
750 pound wagon..	$40 to	$50 per month
1,000 pound wagon.	45 to	55 per month
1 ton wagon.....	50 to	55 per month
1½ ton wagon.....	50 to	75 per month
2 ton wagon.....	55 to	75 per month
3 ton wagon.....	55 to	85 per month
3½ ton wagon.....	60 to	100 per month
5 ton wagon.....	65 to	110 per month

Of course, these rates do not include repairs, replacements or the like. For work outside of that done in the regular course of garaging the machines a charge of 75 cents an hour is made for mechanics' time and 50 and 60 cents an hour for the time of battery men, in addition to the cost of material used. The facilities for doing machine work will be equal to any demands that will be made upon it; machine tools are in course of installation, this work being the last to be carried out in the equipment of the establishment.

Special Rates for Transients.

Transients are garaged at 50 cents per day for wagons up to 1½ tons, and for $1 per day for vehicles from 2 to 5 tons. This does not include charging current, which costs 7 cents per kilowatt, or washing, which costs $1 per car. Current for boosting costs 10 cents per kilowatt.

So much for the work the garage does and will do. With reference to the building, it may be said that it is laid out especially for the purpose for which it is used. The building is 200 feet long on 23rd street and is 100 feet deep; the garage part is but one story high, while the office, at the east end, is in a second story. Back of the offices, on the same floor, is a chauffeurs' room, 20 x 40, with



FIGS. 2 AND 3—LEFT, RECORD CARD FOR MONTHLY INSPECTIONS—RIGHT, BATTERY AND LUBRICATION RECORD

125 steel lockers 6 x 1 x 1, each man having his own locker; a shower bath is installed.

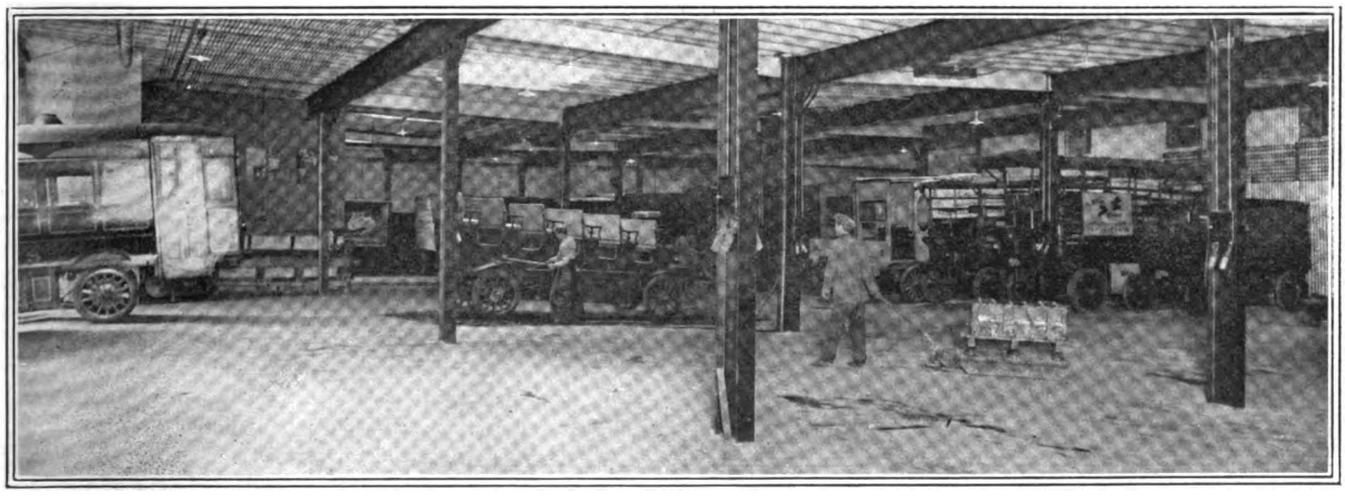
That part of the main floor which is under the office and chauffeurs' room constitutes the battery department and is partitioned off from the garage proper. There is ample room for the work and ample space for air, so that the acid fumes are readily carried off; the ceiling is 16 feet high. Traveling hoists are arranged to convey batteries intact to any part of the room, and there are gas and air pipes for supplying the lead-burning torches, with branches in several convenient places.

Special Room for Switchboard.

There are two separate and complete switchboards, one in the battery room and the other in a separate room built in one corner of the garage proper. The one in the battery room is of course for use in taking care of separate battery work, while the other is for charging batteries in cars.

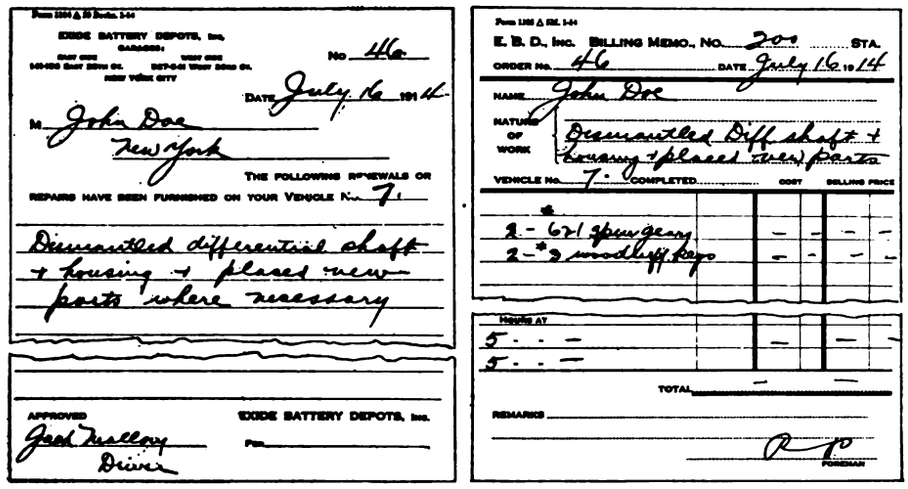
Direct current is delivered to the garage at two voltages—105 and 120—from the United Electric Light & Power Co., whose sub-station is next door. The garage switchboard room is equipped with 80 charging circuits which are taken from 10 panels of 8 circuits each. A battery can be put on charge at 120 volts or at 105 volts, according to its condition and the number of cells, by means of a single-pole double-throw switch, there being, of course, one such switch for each charging circuit in the switchboard room.

By means of a "broken back" switch a battery can be put on the bus direct for charging or it can be discharged through the same rheostat that is used in charging—a matter of no little convenience and a saving of time and



GARAGE INTERIOR—THREE LARGE DOORS OPEN DIRECTLY ON STREET, GIVING QUICK EXIT IF NECESSARY

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EXIDE BATTERY DEPOTS, Inc.
GARAGES:
No. 46
DATE July 16 1914
M. John Doe
New York
THE FOLLOWING RENEWALS OR REPAIRS HAVE BEEN FURNISHED ON YOUR VEHICLE No. 7.
Dismantled differential shaft + housing + placed new parts where necessary
APPROVED Jack Malloy Driver
EXIDE BATTERY DEPOTS, Inc.
Per

E. B. D., Inc. BILLING MEMO. NO. 209 STA.
ORDER No. 46 DATE July 16, 1914
NAME John Doe
NATURE OF WORK Dismantled Diff. shaft + housing + placed new parts
VEHICLE No. 7. COMPLETED COST SELLING PRICE
2 - 621 Spurgears
2 - 3 mod Diff Keys
HOURS AT
5 - - -
5 - - -
TOTAL
REMARKS
FOREMAN

FIGS. 4 AND 5—MECHANIC'S REPORT OF WORK DONE, SIGNED BY DRIVER—BILLING MEMO ON MECHANIC'S REPORT

trouble. When discharging a battery the readings are taken by the same meters that are used in charging.

The circuits are all of No. 3 cable, which is more than sufficient to carry the current practically without resistance, and the fuses are for 100 amperes. The negative bus is not brought into the switchboard room at all, but picks up the return currents around the garage. The rheostats, one for each circuit, are of the Allen Bradley carbon compression type, 2.5 to 1,500 watts.

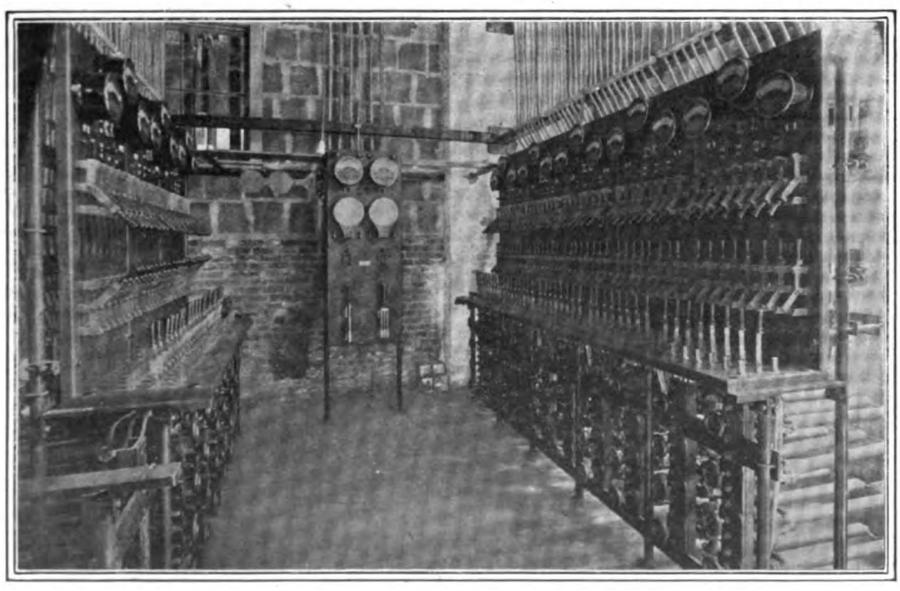
Two Voltages on Switchboard.

The switchboard equipment is such as to permit high boosting rates and high charging rates when the battery is empty and can best be charged rapidly with the 105 voltage, and a lower finishing rate, after the gassing stage has been reached, at 120 volts. The result is a very considerable saving in current consumption by cutting out waste that usually occurs through the use of the rheostat.

Fire risk is exceedingly low, for not only is the building of one story, but there are three 12-foot doors, so that it is easy to get to the street from any part of the garage. It goes without saying that the construction of the garage is thoroughly fireproof. The floor is of concrete, drained effectively. It is the practice of the Exide Depot to do its car washing in one place, so that a wet floor all over the garage is avoided, the "muss" being confined to one spot. This arrangement is made easy by the facility with which electric cars are moved about under their own power. There are 15 skylights in the roof, affording ample light during the day and at night there are fixed and portable electric lights in abundance. All greases and oils are stored in a fireproof vault.

For taking care of underslung batteries there is a hydraulic lift. A convenience for handling batteries is a low truck the wheels of which are locked immovably when the truck handle is raised, making the truck to all intents and purposes a stationary battery stand. Lowering the handle releases the wheels and permits the truck to be moved in the usual way.

Spare mechanical parts for various makes of electric cars, as well as spare battery parts, are kept on hand, and under certain conditions mechanical spares are loaned while repairs are being made, the idea being to keep the car on the road as much as possible.



THE TWO MAIN SWITCHBOARDS ARE HOUSED IN A SPECIAL ROOM AND CHARGING LEADS EXTENDED INTO GARAGE

Records Kept Systematically.

An office, which is always open, is provided in the garage for the superintendent. Here the various shop reports are handled first, and from this office the work is directed. The in-and-out records of cars and the men's time clock are on the walls, and there is a safe in which drivers may place any articles of value that they do not care to leave on their machines over night or during their absence. The office is over the switchboard room and commands a view of the garage floor.

As might be expected, the system employed for keeping track of the work done on both batteries and cars and for keeping tabs on the coming and going of cars is complete in every detail.

Every car that is regularly cared for at the Exide garage is given a thorough inspection each month, and the result of the inspection is reported on a form (Fig. 1) on white paper 4 x 6, having two vertical columns for the printed names of the parts to be inspected and opposite each name a space for remarks. The form covers chains, sprockets, springs, spring links, spring bolts, brakes, steering forks, steering pins, sector pinion, differential gear, motor chain, differential shaft, grease cups, tires, lamps, bell, panels, paint, wiring and miscellaneous.

Battery Inspection Report Form.

The inspector turns the filled blank in at the office, and the information is transferred by means of code letters to the card shown in Fig. 2—G, good; W, worn; L, loose; V, o. k.; A, adjust; T, tight; R, replace; P, poor. Thus the card will carry on one side a complete record of inspections of the car for a year, while the other side will take another year's inspections, as it is printed on both sides.

A somewhat similar card (Fig. 3) is used for a report on battery flushing and equalization and on oiling and greasing the mechanism of the car. The card is

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of the same buff color and of the same fairly stiff stock as the monthly inspection card, and it is of the same dimensions. There are 31 vertical columns, one for each day of the month, and 12 horizontal rulings, one for each month. Each of the horizontal rulings is divided by a light horizontal line, so that there are two squares ruled off for each day of each month. The upper square is used for checking off oiling and greasing, and the lower square for checking flushing and equalizing the battery; at the head of the card are printed check-marks to use for indicating the work done. The card, like the car inspection card, is ruled on both sides and so forms a record covering a period of two years, so that there is an uninterrupted record of inspections in compact form.

indicated on a form 5½ x 7½ on white paper, with head space for a number, date and customer's name and vehicle number and plenty of room in the body for remarks. The driver of the car is expected to satisfy himself as to the work that has been done and then sign the report at the bottom, so that there is practically no chance for a mistake as to what has been done, or what should have been done but was not (Fig. 4).

When the work is finished and has been inspected and approved by the garage inspector and the driver of the car, the bookkeeping department gets a billing memo, shown in Fig. 5, ruled for the order number, billing memo number and date; below that comes the customer's name, the nature of the work done and the number of the car. In

Form 1107 Δ 50 Books. 1-14

DATE July 16 No. 1894

NAME John Doe BILLING No. 300

OPERATION	MATERIAL SUPPLIED
Dismantled differential shaft + housing + placed new 3 par gears + keys	2 - #62.1 spur gears 2 - woodruff keys

MECHANIC	HOURS	INSPECTED AND APPROVED BY
F. Green	5	P. Purcell
MECHANIC J. Mann	5	

FIG. 6—BILLING FORM GIVING DETAILS OF WORK DONE AND MATERIAL FURNISHED APPROVED BY FOREMAN

To furnish information for billing purposes there is a blank (Fig. 6) in book form, the sheets numbered consecutively and each duplicated, so that when a form is filled out and removed from the book a carbon copy is left as a record. The blank is 4 x 6; the head has a space for the customer's name, the date, the serial number and a billing number. The body of the sheet is divided by a vertical line and the space at the left used to note the work done and that at the right to record the material used. At the bottom, on the left, are two spaces for the names of the mechanics and for time entries, and at the right a space for the inspector's signature. The original goes to the bookkeeping department and the duplicate, in the book, remains in the office of the superintendent. This form is filled out by the men who do the work.

When repair work has been completed the nature and extent of the work are

the body of the blank there is a wide space on the left for numbers and descriptions of parts used, and on the right two columns, one for the cost prices and the other for the selling prices of the parts. Lower down there are lines for the number of hours spent on the work, the charge being placed in the selling price column and the whole totalled up at the bottom. At the bottom of the sheet are a couple of lines for remarks by the foreman or superintendent. This memo is used in making out bills and making bookkeeping entries.

Cards for Keeping Track of Stock.

Stock in the garage is kept track of by means of salmon-colored cards 4 x 6. Across the top, running the long way of the card, there are spaces to be filled in with the name of the article (here is a card for each article), its number, cost, selling price, number of pieces or weight of each unit and variation in weight. In the body of the card on the left are four columns, under a common "Received" head, for date, number ordered, number received and the undelivered balance. The rest of the card, to the right, is ruled to record outgoing parts under the heading "Issued," there being two sets of three columns each, headed for number ordered, date of issue and the order number. This gives twice as many places to enter outgoing parts as there are for parts received, as articles usually are received in quantity and issued a few or only one at a time. When one side of the card is filled it is turned over and the other side used, both being ruled and headed in the same way.

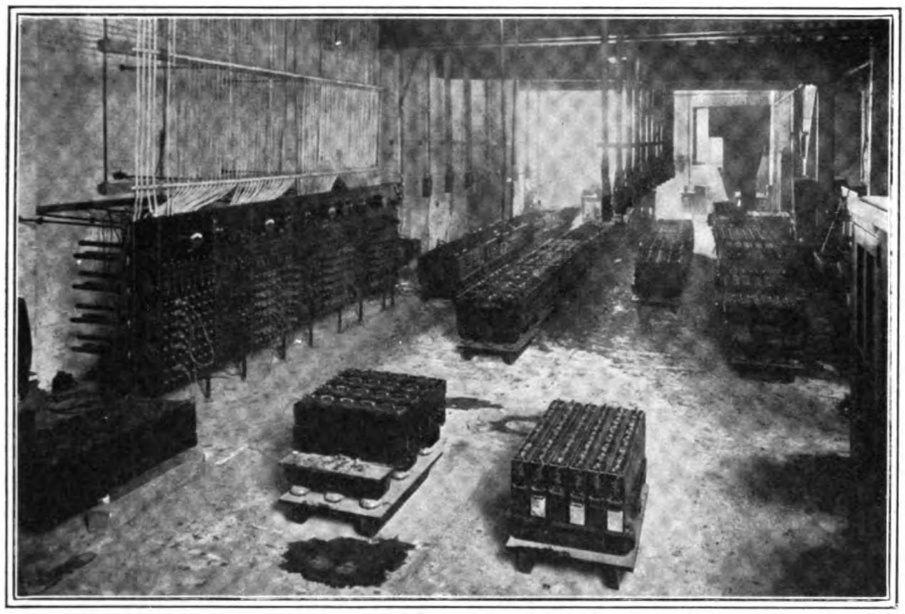
Battery Charging Record Sheet.

In addition to the forms described there are three which are used by the battery department and are of a purely technical nature, having no connection whatever with the bookkeeping department. These are the forms on which records of battery charges and tests are made. The charging sheet is a big one, 12 x 19, of white paper; each sheet has its number in red in the upper left-hand corner, and in the right-hand corner spaces for the date and weather conditions. One sheet is used each night. On the left there are two columns, one for the number of the charging plug and the other for the name and number of the car; to the right there are separate columns for each hour, 12 in all, and at the extreme right two columns for extra meter data. The voltmeter and ammeter readings for every battery on charge during the night are entered on this sheet, readings being taken every hour and entered in the proper column. These sheets are sent to the engineer in charge, who has a file that enables him to give complete data as to the charging of any battery during all the time it was in the garage. Incidentally, there is also a space at the head of each column in which to enter the line voltage, so that the pressure of the current supplied to the garage can be checked at any time.

Watching Battery Cell by Cell.

In ascertaining the condition of a battery it is first charged and then discharged and comprehensive records made of the conditions found in both operations. These records are of much importance, revealing accurately the capacity of the battery—in fact, a charge and discharge test is to a battery what a brake test is to an engine.

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BATTERY DEPARTMENT, WHERE ALL MAKES OF BATTERIES ARE HANDLED

The first step is to charge the battery fully. The blank form for recording the charge conditions occupies half of one side of a white sheet 8 x 9¾ inches. In the heading are spaces for date, battery number and type, number of charge and time and date of commencing charge and of finishing.

The body of the blank is divided into two main parts, the one on the right being merely a continuation of the one on the left, only half the width being need. Altogether there are 48 lines, each numbered from 1 to 48, which is the greatest number of cells commonly used in vehicle batteries.

Vertical columns are headed for cell numbers, first voltage, gravity at end of charge, voltage at end of charge and gravity after dumping and evening cells —which means throwing away the old electrolyte and filling the cells with fresh liquid.

Reporting Battery Discharge Data.

The lower half of the same side of the sheet is used for recording the progress of the long, slow overcharge that is part of the conditioning process. The headings provide for recording the specific gravity of the electrolyte, time and date of starting and finishing charge, and the number of the pilot cell.

The pilot cell is one cell near the center of the battery that is picked out and all readings made from it, as it is unnecessary to test every cell in this part of the work. Readings are taken every six hours—5 A. M., 11 A. M., 5 P. M. and 11 P. M. This is continued for several days, the time varying according to the condition of the plates; the blank provides space for 12 days.

At each reading the temperature of the pilot cell, the rate of flow of the charging current and the specific gravity of the electrolyte are taken and recorded in the headed columns provided.

The discharge that follows the charge is carefully recorded, the entire space on the opposite side of the sheet being devoted to this work. The sheet is headed for date, battery number, normal discharge rate and time, temperature at beginning and end of discharge and time and date of beginning and finishing discharge.

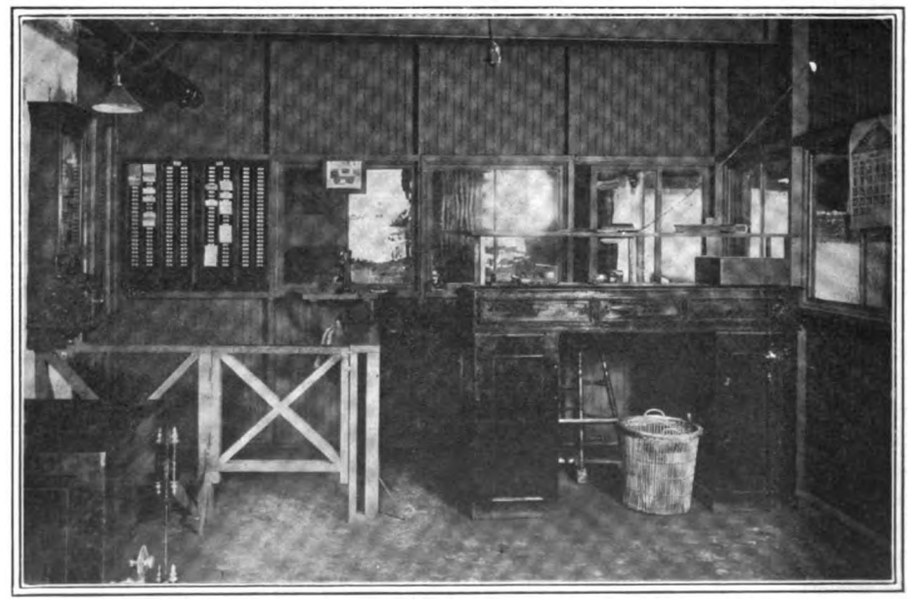
Forms for Special Batteries.

In the body of the sheet are ruled horizontal lines, numbered from 1 to 48. In vertical columns are entered the voltages of the separate cells as the discharge proceeds, so that at the end of the discharge there is a complete detailed record of the battery cell by cell. These voltage readings are taken only toward the end of the discharge when the normal voltage is about to commence the drop that presages the exhaustion of the charge.

For handling Ironclad-Exide batteries, which require treatment a little different from that given ordinary batteries, a special form is used, 13½ x 8½, on white paper. The upper part of the sheet is used for daily readings and the lower part for overcharge reading, and in both cases the form is carried into great detail, so that the record of the work of the battery will be a complete one. On this, as on other forms used for battery work, instructions are printed, so that there can be no mistake as to how the forms are to be filled.

Rates for Pleasure Vehicles.

The Exide garage is designed especially for the handling of commercial electrics and no attempt is made to obtain pleasure car business. Such custom is not turned away if it comes to the door, however. The rate charged for runabouts, victorias and other open machines is $35 per month; for coupes $40 per month; and for large outside driven broughams and landaulets, $50 per month. Of course there are no facilities for caring for gasolene cars, and the only "boarder" of this class is a machine that has a special electrical installation which needs the kind of care and attention that can best be given by electric specialists.



GARAGE OFFICE, WHERE WORK REPORTS ARE MADE, SHOWING SAFE FOR STORING VALUABLES FOR DRIVERS OVER NIGHT

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Believe a Man Alive Until Proven Dead

Don't Approach a Supposedly Dead Prospect With Mental Attitude He is Dead—He May Be Alive After All.

By Ray W. Sherman

. "Red ringer in the corner!" announced Reilly.

"The best of 'em miss sometimes," jibed Ben Doyno, the supplyman, as the cripple Reilly had aimed at failed to fall into the indicated pocket and Ben began to put more goozelum on the end of his cue.

"There! That's the way to do it!" he exclaimed triumphantly. It really was a hard shot and if it had not been Ben's lucky day he probably never would have made it. But he did make it and patted himself on the chest as he stuck his cue in the rack a winner.

"What's the matter? Afraid to play any more?" demanded Reilly, as he saw his chance to redeem himself vanishing.

Doyno Quits.

But, like all "good" pool players, Doyno liked to quit while his record was good. He would have just that much longer to brag about it.

"I'm tired. Let's sit down. I've worked hard today. Didn't make much money either!"

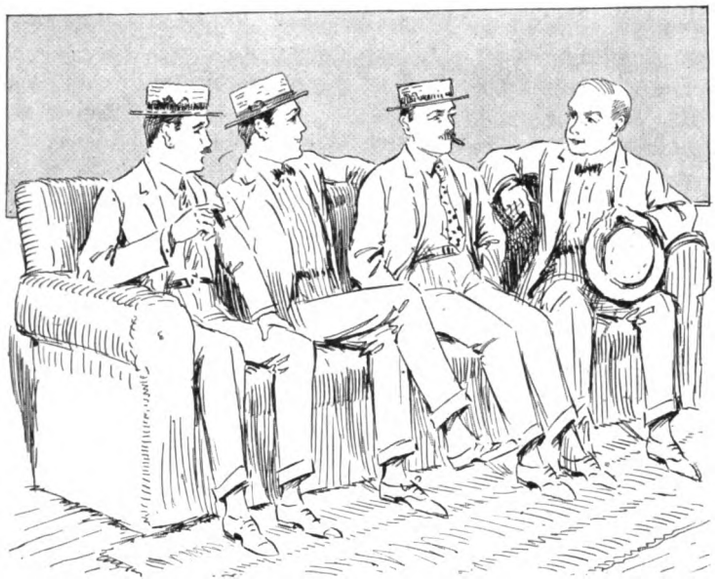
Reilly grudgingly settled with the cashier of the Callawassa Motor Car Dealers' Association's club and the two moved toward the lounging room.

"Wait!" Doyno halted and turned back. "If you won't think I'm taking pity on you I might buy a cigar. I will buy a cigar, whether you will or no. Please select your gift."

Reilly answered the cashier's smile as that club functionary, without being told, dug down into the bottom of the cigar showcase and produced the box which saw the light of day—or night—very seldom unless Reilly dropped in. That cashier was a young wonder. He could pick out the favorites of nearly all the dealers in town.

The clubroom had become quite popular this summer. When it was opened the year before the dealers hadn't warmed up to it very rapidly, but the necessary spirit had been injected this year and now the club as an association project seemed assured of success. It was so successful this summer that when Reilly and Ben Doyno strayed into the lounging room they espied scant space for additional lounging.

They hesitated behind seats which had room for four but which now held but two, and they arrived just in time to hear Lou Brackett, the Macon dealer, tell Henry Bennett, the newly launched Redman dealer, "Yes, Henry, there's dead ones and dead ones, and there's no use monyeking with a dead one. You'll find that out when you've been at it as long as I have. You——"



"DON'T GO AFTER THE DEAD PROSPECT WITH THE IDEA THAT YOU'RE GOING TO FAIL. SOME CORPSES HAVE MONEY"

Dead Ones a Waste of Time.

"Hello Reilly! Hello Ben! Sit down! Sit down!" Brackett interrupted his advice to Bennett long enough to extend this voluble invitation to the seatless pair, and he and Bennett moved over to make room.

"I was just telling Harry here," continued Lou, "that there's no use monkeying with a dead prospect. It's a waste of time."

"Sure. If he's dead," replied Reilly.

"They'll all tell you the same thing," Brackett rambled on. "The way to sell cars is to get the live prospects and plug at 'em. Don't monkey with a man who isn't going to be able or sensible enough to buy a car as long as he lives. You can find out who they are. There's a regular list in this town that's passed up by all the dealers. They're dead. Deader'n a man that never was born.

"Live" "Dead" One.

"Some of them you'll find out yourself are dead and some everybody knows are dead. Don't waste your time on them. There's old Judge Glick. He ought to be able to buy a car but everybody that ever tried to sell him one passed him up as a dead one. He's too darned stingy. And there's Wickes, the wholesale grocer, he——"

"Is he dead?"

Bracket looked scornfully at Reilly. "Dead? Did you ask? He's so dead he——"

"I sold him a car yesterday," calmly announced Reilly.

"You sold him a car!" Brackett almost jumped out of his seat. He turned around sidewise and stared at Reilly—and said nothing more. He couldn't. He had nothing to say.

"You sold him a car!" That seemed to be all Brackett could think of to say.

"Well," slowly responded Reilly, as he took off his straw hat and combed his few remaining hairs with his left hand, "I didn't exactly sell him a car. Charley McGrain and young Tommy Trumbull, my two salesmen sold it. But he's going to buy. We've got his deposit."

Bennett was young in the business. He hadn't had the Redman agency for very long and he was anxious to listen as often as he could to the conversation of his more experienced competitors, but anybody could grow weary under the

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egotistical volubleness of Lou Brackett. Wherefore Bennett smiled quietly and waited for somebody's next move.

"Well, I take off my hat to your two salesmen, then," said Brackett. "Wickes is on the dead list of every dealer in Callawassa. I guess we've all had a shot at him and failed."

"Yes, he was on my dead list," admitted Reilly with a covert smile.

"On your dead list!" exclaimed Brackett. "Well, how in the devil did you come to sell him? That gets me!"

"I don't exactly know myself," replied Reilly. "I guess that young Trumbull lad that I took on a while ago is to blame for it."

"Gee! He must be some salesman!"

"I don't know." Reilly shook his head perplexedly. "One day I think he's going to be and the next day I don't know what to think. But he does pull off some funny ones. After this order was turned in I told Tommy that Wickes was supposed to be dead, and all the lad said was that he didn't know it, if he had known it he probably wouldn't have bothered with him."

Bennett snickered and Doyno looked out of the window, very much interested in the efforts of Pickle Schmalz to pull up the awning of his little German restaurant across the street.

"Sometimes I don't know just what to think about this dead prospect business," continued Reilly.

"What do you mean?" asked Brackett.

Systematize the "Dead" Ones.

"This is a sample," explained Reilly, making a gesture with his hat. The gesture helped Reilly immensely. With his hands tied his tongue would have been sadly handicapped. "We've all got to class some of our prospects as dead," he continued. "That we all admit. But every now and then somebody sells a car to a prospect we all have been passing up and then I wonder if it wouldn't be better to go light on this dead stuff.

"But where I think we're all weak," he continued, "is in taking it for granted that a man is a dead prospect just because everyone chooses to regard him as dead. Two or three make a try at him and he then is automatically posted around town as dead. We all pass him by and never go near him again. Now this Wickes case is a typical instance. Everybody knows Wickes and knows he probably has money enough to buy a car, yet we've all had out try at him and failed, so we labeled him 'dead' and put him in the vault.

"I told Tommy to dig up all the prospects he wanted to and that if he needed any help he could get Charley McGrain to help him close sales—or I would help him. Tommy went to work and did dig up quite a few by nosing around and going after men who he thought ought to have cars and didn't have them.

Case of "Fools Rush In."

"Wickes was one of these. Tommy happened to think of him one day and investigated—and the sonufagun made progress. I didn't know anything about it for several days; I was busy with some other matters — but Tommy thought it looked so good that he got Charley to help him and the first I knew of it they had the old fellow's deposit and a signed contract. It amazed me; I couldn't dope it out; but there was the contract and the money.

"The secret of it all was that Tommy didn't know Wickes was dead. If he had known it he wouldn't have gone near him; he would have passed him up the same as the rest of us. And if he had gone near him with the knowledge that Wickes was supposed to be dead Tommy probably would have been handicapped by that knowledge and it might have resulted in his failure and the retention of Wickes on our dead list."

"Maybe that's true," suggested Bennett, whereupon Brackett, being older and more experienced, of course, gave him a what-do-you-know-about it look.

Watch Your Mental Attitude.

"Your mental attitude has a lot to do with it, that's certain," continued Reilly. "If you went after the man on the assumption that he was alive he would have to convince you that he was dead before you would admit that he was not alive, but when you know a man is dead the procedure is the other way. You have to be convinced that he is not dead before you will admit in your own mind that he is alive. Psychologically it's a negative process in the latter case. You are working mentally in the first case to sell him a car, and in the second case you have your mind made up that he isn't ever going to buy a car and it takes the devil himself to make you believe otherwise. That's why Tommy won out; he didn't know Wickes was dead."

Let Them Die Respectably.

"But what's all this go to do with classing prospects as dead?" demanded Brackett.

"Nothing much," returned Reilly, "except that I think we ought not to bury a prospect too quickly. Give him a chance to die respectably before you hang crepe on his door. I think with many of us it is not a case of the prospect dying but rather a case of our failing by our methods to make a sale. I presume there are some of our lost sales that could have been made by other methods or better men.

"One different method we might well employ, I should say, would be to approach the supposedly dead prospect with as open a mind as we had the first time we went after him. Don't go after him on your reviving trip with the idea that you're going to fail. Try to believe, for the time being at least, that you have some hope of selling him even if he is dead. Some corpses have money."

"Huh!" ejaculated Benny Doyno. Reminds me! Traveling man came through the other day and was telling me about a bill posting deal in New York. It seems that one of the bill posting companies down there had taken on a young fellow in the spring—on commission. He wasn't supposed to be much of a guy; I don't know that he was rated as a real boob but he wasn't so very much.

Approach Prospect With Open Mind.

"There also is one of the newspapers down there which is a typical case of a prospect with the dead sign on him. This paper had been passed up for years by all the bill posters, who regarded going over to that newspaper office as about the biggest waste of time there is.

"Well, this young fellow didn't know he ought to pass up this newspaper so he strayed in there one day and got a slight nibble. He was enthusiastic right away. He went out and prepared plans for a big bill posting campaign, laid out the scheme in detail, and when he got it done walked into a directors' meeting with it. It made a hit. They took him up and he walked out with an order in his pocket for $250,000 worth of bill posting. It was the biggest, or one of the biggest, orders of its kind ever landed in New York. If he had let people know he was monkeying with that newspaper he would probably have been laughed out of a deal. As it is, he can sit down now and do some laughing himself for a good long time on the commissions on that one sale."

"Sure! Yes! Why?" demanded Reilly. He didn't know they were dead! That's all!"

"Well, bad cess to 'em if they start putting pennies on my eyes until after sundown," said Ben Doyno, as he arose and stretched his lanky figure. "But you, Reilly," Doyno slapped the bald spot, "you're almost dead now. You don't need any more labeling."

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Dealer's Legal Status

Owner, Even If Absent, Responsible for Acts of Chauffeur Under His Orders—Not Responsible If Car Is Borrowed or Stolen—Enlightening Cases.

By Geo. F. Kaiser

When a dealer himself is driving or demonstrating a car and runs down and injures someone, he is not apt to be surprised when the injured person sues him for damages; nor is the suit unexpected if, instead of driving personally, he puts someone else in his place to drive for him, as it is well understood in the trade at this time that a person is liable for a chauffeur's negligence when the chauffeur is engaged in his master's business, or is acting under his direction or control.

Owner Responsible If In Control.

When the person employing the chauffeur is not present in the car at the time of the accident, oftentimes a question arises as to whether or not he was acting within the scope of his employment; as for instance, if he should go out of his way to visit friends or to do some shopping on his own account.

It should be remembered, however, that a person owning a motor car may lend it to friends, some member of his family, or even to his chauffeur, and as long as he retains no control over the car during the time it is being used by the borrower, he is not liable for any accidents which may occur. The question of when a car owner is liable for accidents and when he is not liable has come up in a great number of cases.

In a New York case, where a corporation owned a car which was used in the firm's business, while some officers were taking a pleasure ride one day a pedestrian was injured. The court held that as the officers of the corporation were not engaged in the corporation's business at the time of the accident, the corporation was not liable. (Powers vs. Arnold Engineering Company, 126 N. Y. Sup. 839.)

Where a Corporation Stands.

In another New York case (Clark vs. Buckmobile Company, 94 N. Y. Sup. (New York) 771), the general manager of the company took one of the firm's cars on a business trip of his own. A person was injured and brought suit against the company, but the court dismissed the case, saying that the company was not responsible for the general manager when he was engaged in his own private business.

Accident During Demonstration.

In a late Oregon case, where a man who had contracted to buy a car was being instructed by a salesman who had just given him a demonstration, a person who had been run down while walking on the street, was allowed to recover damages aganst the dealer employing the salesman.

The court held that as it was understood the buyer was to be taught to run the car, and the person having charge of it at the time of the accident, though not actually operating it, was one of the dealer's salesmen, the judgment against the dealer was right and proper. (Holmboe vs. Morgan, 138 Pas. (Oregon) 1084.)

Recovered from Hired Car's Owner.

Another case where a dealer was mulcted for damages was Forbes vs. Reinman & Wolfert, 166 S. W. (Arkansas) 563. A man had rented a car from a dealer and while it was being driven by the chauffeur it ran into an express wagon and the one who was renting it was killed. The dealer showed that the chauffeur was an experienced man, having been in his employ for several years and never before having had an accident; with a reputation for carefulness and skilfulness, and that the car had cost $3,500 and was in perfect condition at the time of the accident.

Must Furnish Careful Driver.

On this showing he won out in the lower court, but the representatives of the dead man appealed the case and the higher court said that he must not only furnish a safe automobile and a careful and reliable chauffeur, but that dealers or their agents must also use ordinary care for the safety of passengers, in order that they may be carried safely to their destination; and as the car was exclusively in control of the dealer's agent, and the passenger had no control over him, the dealer was liable for damages caused by his negligence in operating the car.

In Pennsylvania a woman brought an action for the death of her husband, caused by the negligent operation of a dealer's automobile, which collided with a delivery wagon, driven by the husband. The chauffeur had as a passenger the company's cashier, who was returning after depositing some money in the bank.

Employer Pays for Chauffeur's Act.

The court said that the chauffeur and cashier were engaged in the company's business at the time of the accident, even though they had gone three or blocks out of their way for personal reasons on returning from the bank, and for that reason the company would have to pay the injured party. (Witte vs. Mitchell Lewis Motor Co., 90 Atlantic (Pacific) 528.

In Texas, in the case of Buick Automobile Co. vs. Weaver, 163 S. W. (Texas) 594, the court held that, when a seller of a used car is to furnish a competent man to instruct the buyer how to run the car, it is presumed that the period during which he is to be instructed is to extend over a reasonable time. The buyer of the car in this case was injured through the negligence of the instructor and he recovered $5,000 damages from the company by whom the instructor was employed.

While the car was being driven around a corner by the instructor at a speed of about 30 or 40 miles per hour, the car turned over and threw its occupants into a ditch.

Accident Caused by Minor Driver.

The court said that the instructor's negligence was the negligence of the dealer and it was the dealer's duty to furnish a careful driver and for that reason the $5,000 judgment was affirmed and allowed to stand.

In the case of Towers vs. Errington, 38 N. Y. S. (New York) 119, where a husband and wife owned a car together, the wife took the car out one day and, while her minor son was driving, a person was injured. The injured party brought suit against the husband, but the court dismissed the action and held that the boy was acting as the agent of the mother and for that reason the father was not responsible for the damage done.

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WIDE-AWAKE MERCHANDISING

A CHEERFUL, CLEAN SALESROOM HELPS SELL CARS

Few Dollars Spent for Paint and Wall Paper Will Work Wonders—25 Car Sales Were Lost Purely Because of Dingy, Dirty Surroundings.

Even when the finances of a dealer compel him to select an out-of-the-way location he should do the best he can to make his place of business attractive. Of course, everyone agrees with this. But what do you think of a man who tries to sell a car priced at just a couple of hundred less than $2,000, in a town of 60,000 people, and who handicaps himself by the belief that the place of business "cuts no ice" and that people are interested just in the car?

There are just such dealers. There is a typical man of this type, clean, shrewd, honest—and a worker—in a certain Western city of the size indicated. According to his competitors, he has made about half the sales he ought to have made considering his native ability and the merit of the car. And most of the business that he did not get was the result of the negative effect of his salesroom.

Glimpse This Horrible Example.

His desk was placed at one end near the window. It was an old-fashioned desk. The two chairs were rickety. The wall paper was literally falling off in some places. The floor was unmentionable in its splinters and dirt.

Fifteen dollars' worth of plain wall paper and five dollars' worth of painting would have turned the salesroom into a presentable place. The windows could be cleaned at least once a week for a dollar a week—and the desk and chairs could have been at least stiffened up and given a coat of varnish—and the effect on a customer would have been pleasing.

Instead, it was melancholy, dismal and repelling. You felt as if the man was in business for a few days, maybe—but you guessed you had better buy from the fellow up the street who had a good place.

Inspiration in Cleanliness.

Now if this man lost the sale of only **five** cars, instead of the 25 his competitors roughly estimated, by having such a poor place to do business in, he was losing far more than he had any need to lose. The sale of **one** more car would have paid all the expenses of new paint inside and outside. And why not have the joy and the inspiration and the tonic effect of a clean, neat-looking salesroom? He owed it to himself and he owed it to his customers. And he has paid for it even thought he didn't have it if he lost only **one sale** because of the dinginess of his surroundings.

HOT! DON'T LIE DOWN

This Is the Weather Sales Are Made—Let the "Other Fellow" Quit.

When the weather **is** hot—and it's the tail-end of a season—that's the time to let the **other fellow** lay down. Too many people think it is the time to forget business, but wise dealers all over the country are finding out that it pays to be very much on the job. It is really the heart of the season. Hundreds, yes, thousands, of prospects, who have the money saved but who are feeling sort of wobbly as to whether they will buy or not at this time, get the fever to the point beyond resistance.

They **must** have a car. They have seen their neighbors go by day after day—and envied their trips to the country—and they just cannot wait another year.

Who will make the sale?

One thing is certain. It won't be the man who is "cleaned out" and has no cars on hand to sell. And it won't be the man who is off fishing or camping.

Draft Your Campaign, Now.

Get your salesmen together. Plan a campaign of war on the people who are just "on the edge." You must have those orders. Go after them and get them. They are the cream—and why shoudn't **you** have the cream when all it takes is a little extra energy to get it?

Interest the Father of Enthusiasm.

Be interested in your work. It is not only one of the essentials but also one of the secrets of success. Interest in what you are doing is the foe to dullness, inertia and irresolution. Interest begets vim, nerve, energy, force and keenness. It is the father of enthusiasm and action. Interest in your business is the best sales tonic in the world.

Wide-Awake Maxims For Wide-Awake Salesmen.

Consider the Vulcanizer: It gets close to the patch and the tire. It imparts the right heat to both and it stays on the job till a perfect union is effected.

It exemplifies three important rules of salesmanship. First, get close to your customer. Second, keep your enthusiasm and his at the right heat to make your selling points STICK. Third, stay on the job.

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Treat Yourself Fairly

Don't Try to be a Human Cash-Register—Quit on Time

"Every day during the summer it's the same way," said an Iowa dealer. "I work from 8 in the morning till 12 at night. Why? Simply because I can't hire anyone to do the work for me."

That dealer honestly believed he was doing the most efficient thing for his business. As a matter of fact, however, he was far from right.

He could have safely gone home evenings for at least half the week. But instead he stayed on the job, with the result that he lost all the ginger and snappiness he ever had—and did not get them back till Winter, when the selling season had gone for his locality!

Save Energy for Car Sales.

The dealer's job is the sale of cars. That should be his big income maker. There is where his greatest opportunity for a snug income lies. True, the smaller details should be carefully and efficiently handled, but, the most of his energy can be most profitably expended on pushing sales. And if a man is half-tired out before he gets to work what chance has he against a keen, energetic competitor?

What did this dealer who worked such long hours do every night? He sat around and talked to whoever dropped in. Much of the time he spent smoking in the rear seat of his own car outside the store. Occasionally he would wait on transients, fill out checks for storing, washing cars, etc., and sell gasolene. If a man wanted to look at his sample car he was there to show it.

Thus, there was nothing he did that someone else could not do equally well, but he felt **he** must be there. And all the time he was picturing himself as a martyr to his business. How on earth could he have much enthusiasm or initiative left when **he** was always sore at himself.

Use Time With Judgment.

Every man should work hard while he is working. But there is such a thing as recreation—and to most men it is absolutely necessary.

There is just as much opportunity for shrewdness and good judgment in the disposing of your time as there is in disposing of your money! Are you spending your time more efficiently than the Iowa dealer referred to? Answer the question to yourself.



Here's Wide-Awake Merchandising! The Martin-Evans Company sent these cards out offering to supply motorists with keys to its new sidewalk tire-inflating apparatus. Good Results Followed.

SAFETY TRACK TREAD PAINTED ON WINDOW

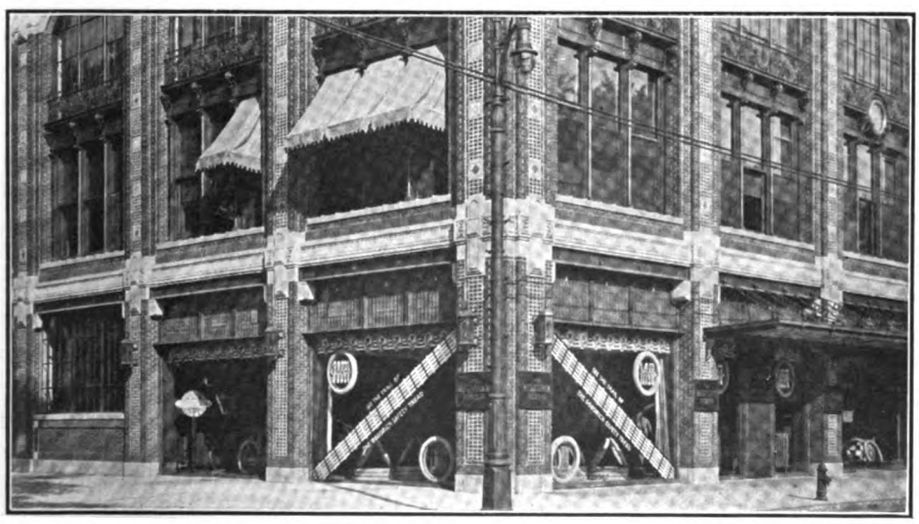
Detroit Goodrich Branch Produces an Effective Display.

The Goodrich Safety Tread was the subject of an exceptionally striking display by the Detroit branch of the B. F. Goodrich Co. during the past week. The photograph shows the strong, effective manner in which "the track of the Safety Tread" was emblazoned across two windows so that passing motorists and others could not fail to catch the significance.

This "track" was painted on the window, of course—and cost very little. Behind it, inside the window is a well-placed grouping of Goodrich Safety Tread tires and several pieces of literature on the subject.

Right at the extreme edge of the left side window will be noticed a Goodrich road sign. Thus the window display as a whole links up two important elements in Goodrich advertising, the Safety Tread and the road signs, which every tourist instantly recognizes.

The Goodrich company has in this Detroit branch an exceptionally good opportunity for trade-compelling displays and Manager Morehead expects to take full advantage of his expansive glass fronts.



SAFETY TRACK TREAD AS IT APPEARED ON THE FRONT AND SIDE WINDOWS OF THE GOODRICH DETROIT BRANCH

It is not the amount of food you eat but what you assimilate that counts. It is likewise not simply the volume of business you do but **how** you do it that insures a profit.

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ONE CHASSIS, TWO BODIES IN WAHL LINE FOR 1915

Price $890 for Either Touring or Roadster Model — Hooded V-shaped Radiator Adds to Appearance and Efficiency.

Two models, a roadster and a touring car, both on the same 112-inch chassis, constitute the 1915 line built by the Wahl Motor Co., Detroit, and the price is $890 for either. Standard equipment consists of top with envelope and side curtains, windshield, extra demountable rim, speedometer, tire carrier, jack, pump and tools; for $125 extra the car is equipped with Deaco electric starting and lighting system.

The Hazard motor with which the new Wahl machine is powered has four block-cast L-head cylinders 3¾ x 4½, the S. A. E. horsepower being 22.5. The unit type of construction is employed, the three-speed gearset being bolted to the rear of the flywheel housing and the unit carried on a three-point suspension.

The usual cover plates enclose the valves, which are on the left side. Each exhaust valve has its individual opening into the exhaust header, while the intake openings are connected to the intake manifold in pairs, there being one opening to the header for each pair. Crankshaft and camshaft each run in three bearings and the latter is driven by spiral gears to keep down noise. The crankcase is of the barrel type, in one piece, with a removable bottom which acts as an oil reservoir and gives access to the bearings. Lubrication is by splash, oil troughs in the bottom of the crankcase carrying oil into which the connecting rod scoops dip at each revolution. The carburetter is a Stromberg and ignition is effected by an Atwater-Kent system, taking current from a Michigan storage battery carried on the right running-board.

Cooling is by water circulated by gravity, the passages being of ample size; the radiator is of the Mercedes type, V-shaped, and a belt-driven fan maintains a draught of air through it.

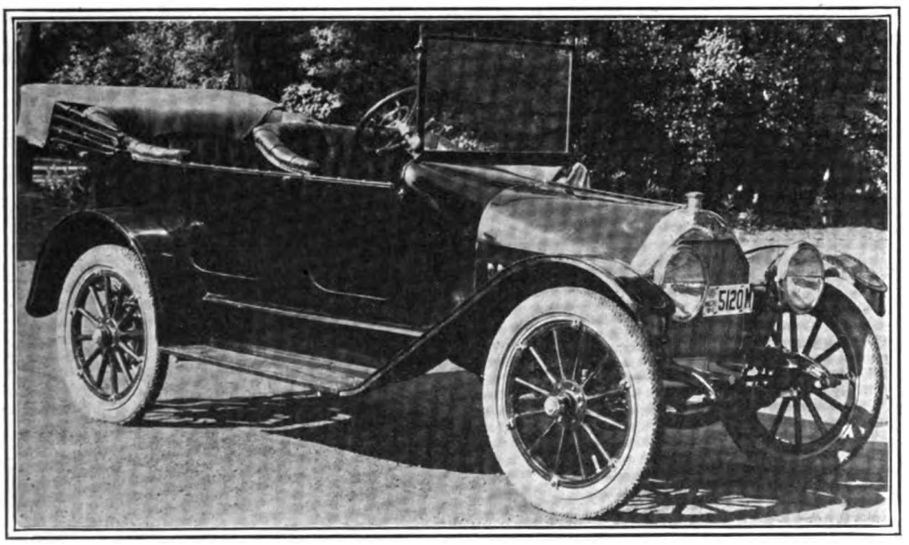
The transmission system includes a 9-inch clutch with raybestos faced disks, a three-speed gearset with shafts running on ball bearings and operated by a centrally placed lever, and an enclosed propeller shaft to the semi-floating rear axle, which runs on Hyatt roller bearings. There is a single universal joint at the forward end of the propeller shaft.

Brakes are of the usual internal expanding and external contracting types with 12-inch drums. Wheels are of wood with 23 x 3½ tires on demountable rims. The rear springs are three-quarter elliptics. The steering wheel is on the right and the control levers are centrally located.

For an additional $125 the car is equipped with the Deaco electric lighting and starting system. In this system the motor and generator are separate and are mounted on opposite sides of the motor, the generator on the right, driven at crankshaft speed, and the starting motor on the left, driving to teeth cut on the rim of the flywheel through an overrunning clutch. The storage battery is a Michigan of 90 ampere-hours capacity, three cells, giving 6 volts pressure. The double wire system is used throughout. In the headlights are two sets of bulbs, large ones for giving a bright light for the open road and small ones for driving in city streets.

The lines of the body are simple and attractive. At the front there is a cowl, of moderate depth, which slopes down to meet the hood which, in turn, tapers toward the V-shaped radiator, giving an appearance of continuity and finish that is distinctly pleasing. Mudguards are wide and are fitted with the usual filling pieces reaching to the body, affording ample protection to the passengers.

There is ample room for three passengers in the rear seat, and the doors are wide enough to afford easy passage. Door hinges and latches are concealed, leaving the exterior of the car flush and clean.



WAHL TOURING CAR WHICH HAS 112-INCH WHEELBASE AND COSTS $890

SELLING POINTS OF WAHL 1915 MODEL.

Price—Touring or roadster	$890
Color	Blue-black
Make of motor	Hazard
Number of cylinders	4
Shape	L-head
How cast	Pairs
Bore	3¾
Stroke	4½
S. A. E. rating	22.5
Ignition	Atwater-Kent
Carburetter	Stromberg
Lighting-starting (extra)	Deaco
Clutch	Disk
Gearset	3-speed
Wheelbase	112
Tires	32 x 3½
Wheels	Wood
Steering	Right
Control	Center
Rear axle	Semi-floating

Equipment: One-man top, envelope and side curtains, windshield, one extra demountable rim, speedometer, gasolene gauge, tire carrier and the usual tools.

Pathfinder Seven-Passenger Added.

A new model that has been added to the line manufactured by the Motor Car Mfg. Co., Detroit, consists of the regular Daniel Boone chassis with a 7-passenger body with tonneau seats which fold into the back of the front seat, a bumper in front of the car and an electrical system in which ignition current is taken from the lighting-starting battery for starting and is furnished by the Westinghouse generator after a speed of 10 miles an hour has been reached. The price is $2,322.

The complete line consists of the new car, the 7-passenger Daniel Boone with swivel extra seats at $2,275, the Daniel Boone 5-passenger car and roadster at $2,222, and the Leatherstocking 7-passenger car at $2,750. The Daniel Boone is the little six and the Leatherstocking the big six.

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Fourth of July Windows That Drew Attention

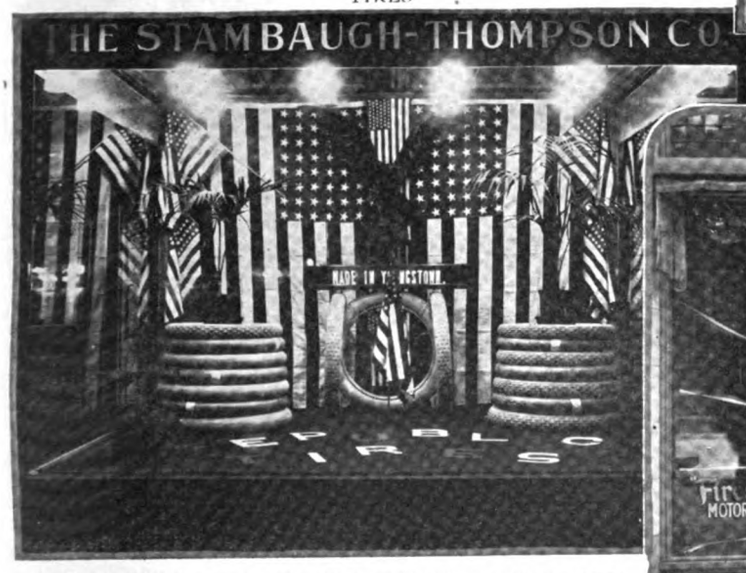
Four Simple Displays That Were Made by Three Detroit Dealers.



ONE OF THE FIRESTONE WINDOWS, FEATURING BUT THREE TIRES



INDEPENDENCE DAY DISPLAY MADE BY E. A. BOWMAN COMPANY WITH THE AID OF A FEW FLAGS AND SOME COLORED BUNTING



THE STAMBAUGH-THOMPSON WINDOW WHICH FEATURED REPUBLIC TIRES



ANOTHER FIRESTONE WINDOW IN WHICH ONLY ONE TIRE WAS DISPLAYED

THE reason for window displays is to attract attention. That window succeeds best which attracts the most attention to the merchandise which it contains. If it forces those who see it to carry away with them a mental picture of the merchandise, it has succeeded in its mission.

In this connection, the various national holidays furnish excellent reasons for topical displays which can be arranged so that the flavor of patriotism and business are so closely interwoven that the thought of one automatically brings up the thought of the other.

On Decoration Day quite a few motor car and accessory dealers dressed their windows appropriately. And on Independence Day still more of them took advantage of this natural opportunity to place their wares prominently before the public in a patriotic setting.

In Detroit, for instance, there were a number of Fourth of July windows which attracted their full measure of attention. Incidentally none proved exorbitantly expensive to produce, as the accompanying illustrations make plain.

The expansive windows of the Firestone Tire & Rubber Co. on Woodward avenue were tastefully decorated with red, white and blue steamers of paper and American flags. And in both cases it should be noted the appearance of crowding was very carefully avoided. In one window only one tire was displayed and in the other there were only three. Work for simplicity.

The window of the E. A. Bowman company was no more elaborate in its decorations, two or three American flags serving to set off the display of merchandise. Strips of star-spangled red, white and blue bunting at the top of the window served to confine the attention of those who saw the display to the goods in the window.

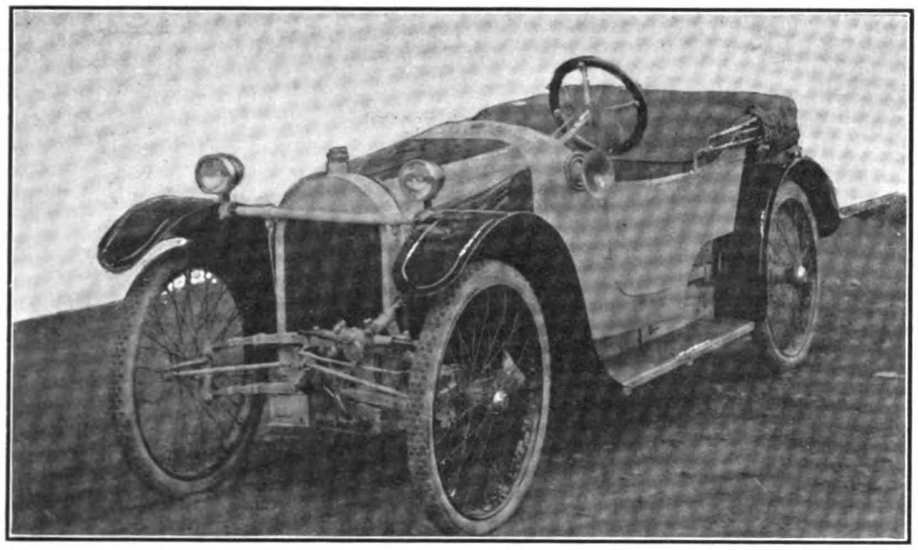
The Stambaugh-Thompson window makes a palpable feature of Republic tires and with the aid of a number of American flags tastefully arranged the display is well set off. Another good feature is the arrangement of potted plants in the center of the piles of tires on either side. The announcement "Republic Tires" across the bottom of the window was the only one appearing other than the electric sign stating where the tires are made. All of these windows contain excellent ideas.

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FOUR CYLINDER MOTOR IN IMP CYCLECAR FOR 1915

Single Chain Drive to Live Rear Axle Replaces V-belts; Friction Gear is Retained as Well as Narrow Tread.

A new Imp cyclecar has been brought out by the W. H. McIntyre Co., Auburn, Ind., which, while resembling the original Imp in that it is a small, light machine for two passengers, with narrow wheelbase, has a four-cylinder motor and drives through a pair of friction disks and roller chain and sprockets to a live rear axle. The price, with equipment, is $420, and without, $395. Electric starter and electric lighting system with generator and storage battery are added for $75 extra.



LATEST MODEL IMP CYCLECAR, WHICH HAS FOUR-CYLINDER BLOCK MOTOR

The equipment consists of top with side curtains and cover, electric head and tail lights taking current from special dry cells, mechanical starting device operated from the seat, and the usual tools. The occupants of the car are seated side by side.

The motor, which has block-cast L-head cylinders, has a bore and stroke of 2¾ x 4, which gives an S. A. E. rating of 12.1 horsepower. The crankcase is of the barrel type—that is, it is not split in the middle—and is of aluminum. Two bearings are provided for the nickel steel crankshaft. The same material is used in the one-piece camshaft, which actuates the valves through large rollers mounted in the lower ends of the push-rods. The connecting rods are steel forgings. Both manifolds are cast with the cylinders. The motor is carried on a three-point suspension.

Lubricating oil is circulated by a plunger pump and splashed by the connecting rods in the usual way. Ignition is accomplished by a battery system developed especially for the car, the circuit breaker and distributor being designed on magneto principles.

The friction change-speed gear is mounted in a steel frame and is supported by self-aligning ball bearings. Connection between the engine and the driving disk, which is of cast iron, is through a shaft having a universal joint.

The driven disk is mounted on a cross shaft upon which it slides when changing speeds; the driven disk has a friction rim of compressed paper. The disk is released from the driving disk by a pedal and shifted by a lever, the pedal corresponding to the clutch pedal and the lever to the change-speed lever. Notches are provided for four speeds. Eccentric mountings provide a ready means of adjusting the disks in any direction.

Final drive is through a single roller chain to the live rear axle, the distance between sprocket centers being 17½ inches. The friction gearset is mounted under the seat near the rear of the car. The rear axle shafts are carried on roller bearings. Instead of the conventional central differential each wheel is fitted with a gearless differential device which is said to be effective in reducing skidding.

Internal expanding brakes are operated by a pedal and constitute the service brakes; the emergency brake is on the jackshaft and is operated by another pedal. Service brakes are equalized. The wheels are of wire with tangent spokes and are fitted with 28 x 2½-inch studded tread tires; wheels and tires are the same size front and rear. The steel hubs carry the brake drums and the differential devices.

The two front springs are transverse semi-elliptics and form the front axle. The construction affords a castor effect which makes the wheels run straight ahead in case of steering gear breakage. The rear springs are cantilevers, 24 x 1½, and can be adjusted to take up chain wear. Steering is effected through a rack-and-pinion gear, the wheel, which is 14 inches in diameter, being on the left side.

Two passengers, sitting side by side, are provided for in the body, which is of the customary stream-line type. The seat is 37 inches wide and 16 inches deep, with a high, comfortable back, and is upholstered in artificial leather. The doors are of ample width. The gasolene tank, holding 5 gallons, is located high up in the cowl, and the fuel has sufficient pressure to feed strongly to the carburetter at all times regardless of grades. Throttle and spark control levers are mounted on the steering wheel in the usual way.

The motor is started from the seat by a handle attached to a steel cable, the cable being automatically rewound by a spring actuated mechanism. The headlights and tail light are electric and are supplied with current by a set of dry cells. The makers give the weight of the car as 850 pounds.

SELLING FEATURES OF THE LATEST 4-CYLINDER IMP

Price	$395
Price, equipped	$420
Number of cylinders	4
Shape	L-head
How cast	Block
Bore	2¾
Stroke	4
S. A. E. rating	12.1
Ignition	Battery
Starter	Mechanical
Lighting	Electric, battery
Clutch	None
Change speed	Friction
Wheelbase	90
Tires	28 x 2½
Wheels	Wire
Steering	Left
Control	Center

Equipment: Top with side curtains and cover. Battery electric lighting system, mechanical starter, tools, etc. Electric starting and lighting with generator, $75 extra.

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General Summary of Truck Tire Situation

Tire Engineer Analyzes Operating Conditions and Tire Requirements — Believes Insufficient Attention Is Paid to Selection—Suggests Purchasing by Specification.

By J. E. Hale.

In his paper read before the summes meeting of the S. A. E. at Cape May last week, J. E. Hale, experimental engineer for the Goodyear Tire & Rubber Co., analyzes the solid tire situation in a most unusual manner. He calls attention to the fact that little or no attention has been paid to the suitability of certain tires to certain operating conditions, with a view to selecting the best tires for those conditions; tires differ considerably, and a tire that is best for one locality may not be the best for others. Tires have critical points of load and speed under which they give the best results; at heavier loads they are dead and at lighter loads they bounce. In making tires it often is comparatively easy to develop one particular quality, but at the sacrifice of others having greater aggregate importance. It is suggested that tires might be bought subject to chemical analysis, as are many other commodities, so that a purchaser, knowing the composition of a satisfactory tire, might be sure of duplicating it. The statement is made that there is no advantage in traction in a notched tread tire running on a dry surface, the grip being due to simple friction.

Taken in a broad sense, undoubtedly economy of truck operation is the real issue. It follows, therefore, that if an "economical tire" could be evolved an ideal solution would be at hand.

Solid tires in service under certain operating conditions give certain results in the performance of their functions. These results are dependent on the tires themselves and on the conditions under which the tires are used; consequently we may propose an equation which indicates a balancing condition as follows:

$$\left\{\begin{array}{l}\text{The results of service performance, which may be termed "commercial properties"}\end{array}\right\} = f\left\{\begin{array}{l}\left\{\begin{array}{l}\text{Operating conditions}\end{array}\right\} \;\&\; \left\{\begin{array}{l}\text{Tire details or physical properties of the tires}\end{array}\right\} \;\&\; \left\{\begin{array}{l}\text{Selling cost}\end{array}\right\}\end{array}\right\}$$

$$\left\{\begin{array}{l}\text{Cost per tire-mile}\\ \text{Durability (Total Mileage)}\\ \text{Resiliency (Power Consumption)}\\ \text{Cushioning effect}\\ \text{Reliability}\\ \text{Service cost}\\ \text{Tractive grip}\end{array}\right\} = f\left\{\begin{array}{l}\left\{\begin{array}{l}\text{Loading}\\ \text{Speed}\\ \text{Spring-suspension}\\ \text{Road surfaces}\\ \text{Topography}\\ \text{Weather}\\ \text{Driver}\end{array}\right\} \;\&\; \left\{\begin{array}{l}\text{Structure}\\ \text{Diameter}\\ \text{Width}\\ \text{Shape cross-section}\\ \text{Tread rubber}\\ \text{Toughness}\\ \text{Attrition-resistance}\\ \text{Plasticity}\\ \text{Scheme of attachment}\\ \text{Weight}\end{array}\right\} \;\&\; \left\{\begin{array}{l}\text{Selling cost}\end{array}\right\}\end{array}\right\}$$

The "commercial properties," representing as they do the results of service performance, are of particular interest as they are a measure of the satisfaction received. Cost per tire-mile, durability, tractive grip, service cost, and power consumption are capable of being expressed by exact numerical values. Cushioning effect and reliability are indefinite but none the less important.

The "operating conditions," loading, driver, and to some extent, choice of road surfaces are under the control of the truck owner. The spring suspension is wholly and the loading to some extent under the control of the truck designer. Topography, weather, and in part the road surfaces must be accepted as they are. Of the operating conditions, loading and speeding alone may be expressed in numerical values.

The items under "tire details" pertain to the physical properties of the tires themselves and are self-explanatory.

In this discussion it may be noticed that cost or money value is mentioned only in connection with the commercial properties of the tires. Of course the item of cost is present on the other side of the equation in the various subdivisions of the "tire details."

Without being specific as to the precise relation between cost and tire details, let it suffice to say that the value of the finished product is largely in the materials which enter into its fabrication.

This equation is explained as representing a balancing condition. Of course this is true enough if we have been careful to include all the component subdivisions relative to the main parentheses of the equation. It will shortly be pointed out that practically all the terms on both sides are variables between rather wide limits and that broadly speaking the whole situation centers about what we do not know and what we want to know about the effect produced on the "Commercial Properties" by changes or alterations of the various "tire details" or "operating conditions."

To take an example, we might accumulate data upon a certain tire of average "physical properties" and which had been in service under average "operating conditions" (Chicago for instance) and for commercial properties we would find the cost per tire-mile to be ¼c. The mileage given, 10,000, the power consumption, 9/19 horsepower-hour per ton-mile per tire, the tractive grip represented by an average coefficient of friction of .40, a service cost of 1¾ hours interruption of service in changing tires, and the cushioning in its effectiveness to reduce destructive vibration while not capable of definite expression in figures is nevertheless a very important and definite quantity.

Results of Changing Variables.

Now, if we change any of the variables on the right-hand side of the equation this will naturally result in a change in one or more of the commercial properties. Assuming for instance that the speed (that is the average speed at which the truck is driven) be diminished, we will find the cost per tire-mile decreased, the durability increased, the resiliency altered, the cushioning effect increased, the reliability increased, the tractive grip probably increased and the service cost unaltered. On the other hand, suppose we change one of the physical properties of the tire, say stiffen the compound. The cost per tire-mile would probably be reduced, the total mileage probably increased, the cushioning qualities decreased, the reliability unaltered, the tractive grip diminished, the service cost unaltered, and the power consumption decreased or increased according to road surfaces.

Although the circumstances are familiar to everybody, let us enter here as a matter of record and comparison the existing scheme of judging the satisfaction obtained from the service of solid tires. In a few cases, notably among the large owners, cost per tire-mile receives considerable attention, but in general it may be said that a tire which runs its mileage guarantee without developing any distressing symptoms is satisfactory, a tire that exceeds the mileage guarantee gets the business in the future, and a tire that fails to give the mileage gets a black-eye. Also it often happens that service helps to sell a tire.

The "commercial properties" should be discussed more or less in detail since they represent the satisfaction obtained from the use of the tire,

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and also the possibilities of choosing the best possible combination of component operative conditions and tire details to fulfill the requirements of the "economical tire." In what follows it should be borne in mind that economy of truck operation taken as a whole determines for our discussion the actual values of the commercial properties of the "economical tire."

Conditions Affecting Tire Service.

Obviously it is desirable to have the cost per tire-mile as small as possible consistent with the complete qualifications for economical truck operation. This is one of the most important of the commercial properties in the matter of economy and it happens that it is dependent on practically all of the subdivisions of the operative conditions and physical properties of the tires. The better the road surfaces and more nearly level the country, the lower the cost per tire-mile. Likewise the tires will show up better under a careful driver than one who does not try to favor them. As for weather, extremes of heat and cold have a detrimental effect on the rubber, consequently increasing the cost per tire-mile. Spring suspension is mentioned as one of the operating conditions. This may seem a little far-fetched, yet we know that the efficiency of the springs in performing their functions has a very decided effect on the life of a tire.

Considering now the load on the tire and the speed at which the truck is operated, all will agree that the lighter the load and the slower the speed, the lower the cost per tire-mile, but returning to our fundamental idea of economical operation of the truck there is undoubtedly one combination of load and speed (assuming tire equipment of specific "physical properties") which will give a maximum effect in the matter of truck operating economy, yet the cost per tire mile will be greater than were the speed to be slower and the load less. Again by simply altering one of the tire details, say stiffening the compound, an entirely new set of relations will be established, with the result that the economical load and speed will differ from those of the preceding case. Change the structure, diameter, width or shape separately or collectively and our economical load and speed have to be sought anew and also a new cost per tire-mile.

Economy of Power Important.

Strictly speaking, durability is a property which is closely allied to that of cost per tire-mile and there is a strong temptation to believe that they are inversely proportional. The principal exceptions to this are to be found in the details of the tires themselves. Thus it is perfectly possible to compound the tread rubber to give it a very low cost per tire-mile and at the same time produce a tire which would give but small total mileage. The same idea could apply in the case of the structure of the tire under certain circumstances. Apparently the predominant attitude of the wideawake truck owners is decidedly favoring the choice of tires which run long mileages. The importance of uninterrupted operating schedules is undoubtedly largely responsible for this condition; moreover, it is probably true that many owners would feel justified in sacrificing, if necessary, a slight saving in tire cost if it came to the point of choosing between the two properties.

Resiliency will presently occupy a very decidedly more prominent position in the list than it has in the past. The requirements of electric vehicle practice have for some time demanded the most efficient tires possible; some manufacturers even make the other commercial properties secondary to this one. Surely gas truck operators should recognize the possibility of greater economy from the use of efficient tires just as does the electric truck operator. An example will emphasize this point. It is very easy to pick out from among the brands and types of tires on the market those which will absorb 25 to 40 per cent. more energy than the most efficient; consequently if a 3-ton truck consumes, say from $400 to $500 worth of gasolene a year, a very considerable cash saving could be made by using more efficient tires. As the rubber is "lively" or "dead" (by virtue of the nature of the compounding) so will it be efficient or inefficient when measured for power consumption. The stiffness or plasticity of the compound also plays an important part in the determination of efficient performance. Efficiency is very dependent on the character of road surface over which the vehicle is operated, particularly as to the distinction between rough and smooth road surfaces. Other things being equal the soft tread rubber will give greater efficiency on the rougher roads.

From the foregoing it will be seen that the resiliency of the tire is largely dependent on the compounding of the tread rubber. To what extent it is dependent on the other physical properties of the tire is somewhat uncertain, but surely not to any marked extent. The efficiency varies slightly with extremes of heat and cold; also with different loads and speeds.

The invention and especially the perpetuation of the India rubber tire were possible because of the benefit derived from the cushioning properties of the rubber as a lessener of uncomfortable and destructive vibrations. How many times has it been remarked that motor cars are possible because of the pneumatic tire? Is it not true that motor trucks would not be possible without rubber tires? Just think of a 3-ton truck equipped with steel-shod wheels rattling over the average pavement at 8 to 12 miles an hour—and the poor pavement!

Effectiveness of Tire Traction.

Of course the plasticity or stiffness of the tread rubber is by far the most important item affecting this commercial property and it goes without saying that a soft yielding compound will protect the mechanism of a vehicle better than a hard stiff one. The remaining items of tire detail each influence the cushioning effect in minor ways. It is rather unfortunate that up to the present time the tire companies have found no way of making a tread rubber of exceptional cushioning qualities and at the same time of low cost per tire-mile. We find that the softer and more yielding the stock the better its quality must be to give reasonable service, and quality represents price. This fact is also particularly noticeable: Tires made of soft compounds are very much more liable to fail structurally under heavy loading. It might be interesting to remark that there is one critical load for each size tire and for each speed where the cushioning is most pronounced; that is, a lightly loaded tire will bounce and thereby exaggerate vibration; on the other hand, a heavily laden tire will show less response in cushioning due to its already highly distorted condition. Tires are similar to springs in this respect.

The reliability of a solid tire in performing its functions needs very little comment. It is listed as one of the commercial properties because it is a property which is of considerable importance to truck operation as a whole. In the case of truck tires this property is practically entirely dependent on the tire details themselves.

The remarks concerning reliability apply equally well as to service cost; in addition there is, of course, the question of attention on the part of the selling house.

The effectiveness of the traction of a tire is dependent on the coefficient of friction between the tread rubber and the road surface. Consequently compound, width, weather (wet or dry), loading and the character and condition of the road surface are the principal elements affecting traction. On dry surfaces there is no advantage to be found from the use of a notched or broken tread over the use of a continuous tread, for in either case the grip of the tire is dependent on the simple phenomenon of friction between the rubber and road surface. Wet or greasy pavements are well known to be annoying and often dangerous.

So far nothing has been mentioned about the ways in which tires wear out or fail. This should be outlined briefly as several of the commercial properties are directly dependent on the wearing qualities of the tires. You will notice that the various items under each main subdivision are enumerated as forms of legitimate wear or as forms of abuse. The significance of this is suggestive rather than absolute, the idea being to convey the distinction which one would observe in the case of perfect service.

A—Abrasion of tread rubber, due to

Legitimate Wear.

1—Tractive effort
2—Natural wear of rolling friction
3—Skidding

Abuse.

4—Spinning wheels by quick starts
5—Sliding with brakes set
6—Wheels out of alignment

B—Cutting, chipping, or spreading of tread rubber, due to

Legitimate Wear, Abuse.

1—Sharp stones, glass, etc.
2—Poor road surfaces in general
3—Car tracks
4—Use of anti-skid devices

C—Disintegration or deterioration of tread rubber, due to

Legitimate Wear, Abuse.

1—Sun and heat
2—Allowing tires to freeze
3—Oil on garage floor
4—Heating by excessive speeding

D—Failure of the tire structurally, due to

Abuse.

1—Overloading
2—Speeding
3—Shocks and impacts from reckless driving over uneven road surfaces.

E—Premature failure or wear, due to imperfections of manufacture.

The foregoing is an exposition of the relevant elements entering into the determination of the proper tire sizes. This method of elaborating on the situation is apt to leave the inference that the situation is so hopelessly complicated that there is nothing in particular to be done except make the best of it. On the other hand, I realize that there are many who, although they will not dispute the truth of the facts presented, will be tempted to depreciate their significance, preferring to dispose of the matter by insisting that "tires are tires" and that it is up to the tire companies to produce the goods.

Error of Unbalanced Development.

Before us is a summary of the items by which the service performance of the tires are judged and an exposition of the factors on which these various items depend, and finally the possibilities to be taken advantage of in the way of attempting to regulate the tire problems toward more satisfactory ends. You know to what extent operating conditions can be controlled and regulated. As for tire details those having a knowledge of tire design and manufacture realize that with proper attention to compounding and fabrication methods a wide variety of constant results is possible. I wish to bring out one point very emphatically, however:

While it is possible to alter tire details so that results shall vary through a wide range, it is also true that if these details be altered with the idea of highly perfecting one commercial property, this may be at the sacrifice of some other property or properties of nearly equal importance.

What does the motor truck industry want as qualifications for a satisfactory motor truck tire?

In other words, what is the relative importance of the commercial properties? Are we getting all the cushioning effect desirable consistent with economy of truck operation? Should not more stress be laid on the property of power consumption for the ultimate benefit of economic truck operation? How much should we sacrifice

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in the cost per tire-mile property and the durability to balance the other properties for the good of economical truck operation? Manifestly all are not of equal importance. For instance, if the cushioning effect be highly developed with the idea of decreasing the truck repair expenses by lessening the destructive vibration, this much is certain, the tread rubber will necessarily be of a soft yielding compound in such an idea. But we will find the cost per tire-mile increased and the durability diminished very materially unless we diminish the load which the tires carry, which in turn will raise the ton-mile cost of truck operation. To a slight extent, with the introduction of additional cushioning effect, the resiliency and tractive grip may or may not be altered.

If the stiffness or plasticity of the tread rubber of the various brands and types of tires be compared, it will be found that there is a wide variation. In spite of this, well-known makes of trucks in any locality, equipped with competing tires which exhibit these marked differences, will be found running side by side.

Surely so important a property as that of cushioning effect should be more or less uniform under similar conditions. I often ask engineers, owners and drivers whether they want a hard stiff tire, which will give almost no cushioning to the truck, or a tire which will protect the truck even if the tire-mile cost is a little higher. Some have never given the idea any thought, some (users particularly) do not care anything about the tire so long as it wears, some are looking for information, and a few have such decided convictions in favor of proper cushioning effect that they will not use solid tires of and description and choose the more expensive pneumatic.

This illustration of the relations between cushioning effect, and the plasticity of the tread rubber, is typical of a multitude of combinations of properties and conditions which might be portrayed. It would be an endless and wearisome task to enumerate and discuss all these combinations.

At the present time the formalities of truck tire merchandizing are limited to a guaranty of perfection in workmanship and a certain maximum cost per tire-mile. Also, each tire company has its own special list of permissible loads which each size of tire may carry.

Purchasing by Specifications.

Without dwelling on the shortcomings of this happy-go-luck method of dealing in tires, permit me to call to your attention that in the iron and steel world it is customary to buy and sell material which fulfills the requirements of certain chemical or physical specifications. The art has been perfected to such an extent that the measurement of the elemental subdivisions is now a matter of every-day routine in the up-to-date office, and moreover it is recognized that buying on specifications is the only sane policy—fair to both purchaser and seller.

Standardization is not by any means limited to steel; Portland cement, paints, chemicals, electrical apparatus, boilers, etc., are all more or less thoroughly standardized.

In outlining the solid tire situation I have proposed an equation representing a balancing condition between the results which the tires give in service on one side, and the details of the tires themselves, the cost of marketing, and the conditions under which they are used on the other. By developing this equation in detail I have attempted to emphasize:

1st. The complexity of the solid tire problem due to the innumerable variables into which the whole may be sub-divided.

2nd. The importance of recognizing that economy of truck operation in its broadest sense should be the guiding motive behind any solid tire considerations.

3rd. The fact that the performance of solid tires in service has never been given the proper attention in the matter of criticism from the angle of economic truck operation as a whole.

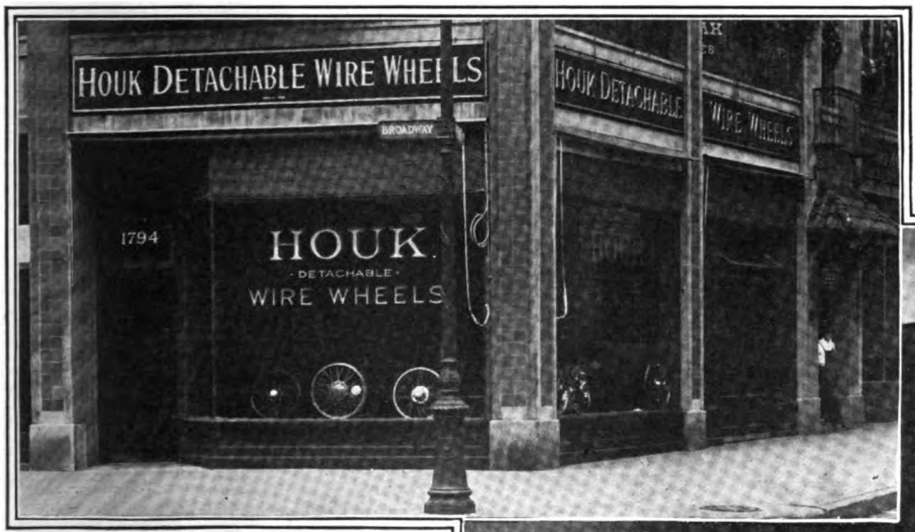
4th. The logic of recognizing the "commercial properties" and the desirability of discovering their relative importance.

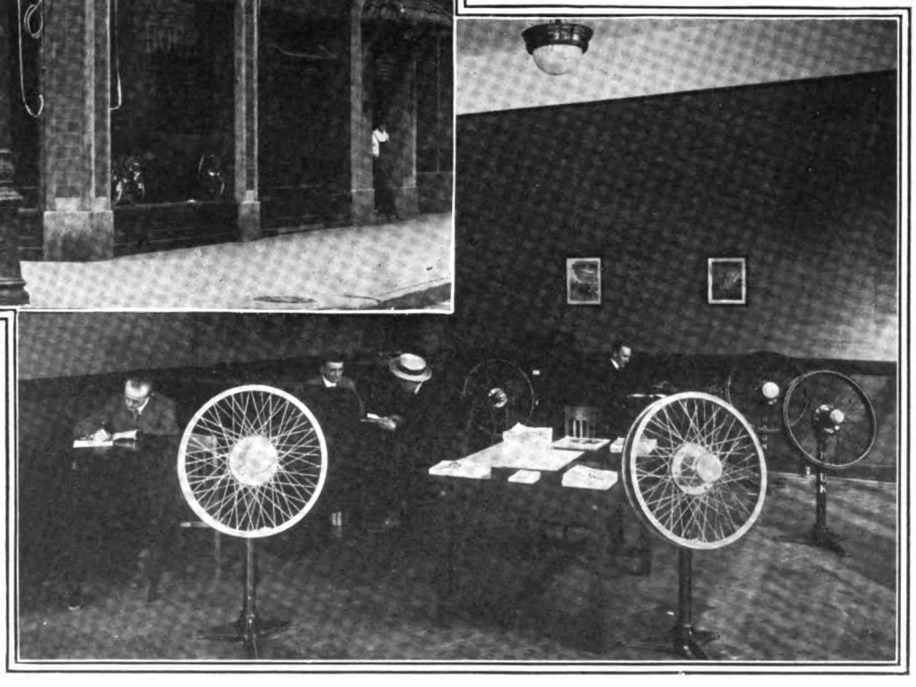
5th. The limitations encountered in bringing about ideal conditions due to practically positive inability to regulate or control the operating conditions which are included under road surfaces, topography, weather, and driver.

6th. The facts that the solid tires are still capable of considerable development and that this development is essentially a process of evolution and elimination; also that there are certain practical limitations in the production of the tires themselves which permit the attainment of high degrees of perfection of certain commercial properties only at a sacrifice of others.

In conclusion I simply venture a general summary. The ideal disposition of truck tire standardization would be to prescribe standards of commercial properties to be attained when the tires are in service under standard road surface conditions; the variables under this scheme would be the tire details. However, inasmuch as it would be impracticable, to say nothing of being cumbersome, to test each tire for the values of the commercial properties, to determine whether they come up to standards or not, it would develop that once we have arrived at and defined a satisfactory condition in the matter of service performance, the simplest proposition would be to take cognizance of the physical properties of the tires themselves and standardize them together with the loadings, speed and spring suspension.

Simplicity Makes Attractiveness in this New York Branch





THESE two photographs show the exterior and interior of the recently established New York City branch of the George W. Houk Co., Buffalo, N. Y. It is located on a prominent Broadway corner directly in the heart of the motor car district.

In the arrangement of the desks and display fixtures within the salesroom a palpable effort has been made to keep plenty of open space and thus to avoid any suggestion of crowding. As a result, the salesroom is unusually attractive; it has a business-like appearance which is in accordance with the spirit of the organization.

Good use has been made of the extensive display windows. A clear view of the interior is not obstructed by a great mass of lettering.

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Advanced Maintenance

REMOVING AND REPLACING TANK HEAD

By George Fernwell

In replacing the head in the tank it will usually be found difficult to raise the perpendicular rim of the head completely home all around inside the folded seam which is part of the body of the tank. Fig. 6 shows an effective means of doing this.

Six or eight loops should be strongly soldered at intervals around the head. Each of these will afford a means by which leverage can be applied to the head to raise it as high as possible within the seam. It is usually best at each successive point at which leverage

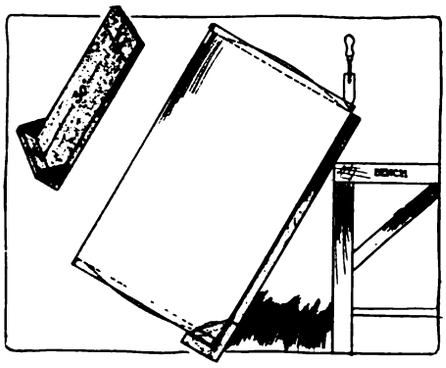


FIG. 1—SUPPORT FOR HOLDING GASOLENE TANK IN CONVENIENT POSITION WHILE USING SOLDERING IRON ON HEAD

may be applied in the described manner to close the seam with pliers and temporarily solder the head to prevent its springing away when the leverage is released.

Using Hatchet Soldering Iron.

It can be observed that the shape of the tank illustrated in the preceding article is a contour consisting of curves of small and large radius alternately. In soldering a seam of this kind the quickest and most effective work can be done if a choice of varying shapes of soldering irons be available.

A form of soldering iron known as a "hatchet iron" is very much more effective in applying heat when soldering the seam where the curve is of very large radius if not, as in some cases, altogether straight. See Fig. 5.

On the other hand, a hatchet iron, unless especially filed to suit cannot be as effectively used where the seam is curved to a comparatively small radius as a heavy soldering iron of the ordinary type.

There are two ways in which the seam under discussion can be soldered. The cheaper and quicker way is to apply a mass of solder all around the seam in the form of a heavy fillet (Fig. 2) without any special effort to thoroughly heat and sweat the seam. The more thorough manner consists of first soldering the seam completely around with the iron sufficiently heated and held long enough at each successive point of the seam to cause solder to penetrate in a thin film completely through and between the folds of the seam.

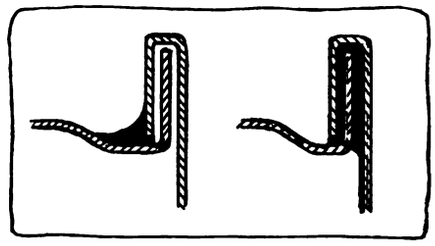


FIG. 2—LEFT, EXTERNAL FILLET OF SOLDER, QUICKLY APPLIED, AND, RIGHT, SWEATED SEAM, A MUCH BETTER JOB

In this first course of soldering with the object of "sweating" or causing the solder to penetrate the seam, there can be no fillet formed as shown in Fig. 2, on account of the greater degree of heat applied when sweating the seam, rendering the solder more liquid as compared with the limited amount of heat permissible when forming a fillet of solder.

To efficiently carry out the described "sweating" process, the heated soldering iron at first should be held stationary in contact with the seam, until sufficient solder has been fed to the point of the soldering iron to form a miniature bath of melted solder in which the nose of the soldering iron is immersed. Very much more heat will be conducted from the soldering iron through the medium of the pool of solder than when relying only upon contact of the point of the soldering iron and feeding with apparently just sufficient solder for the requirements of the seam at each successive point.

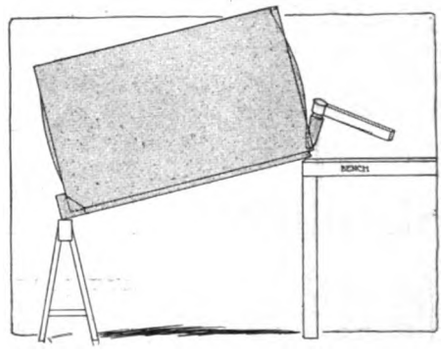


FIG. 3—GASOLENE TANK SUPPORTED ON TRESTLE AND ANGLE BOARD WHILE APPLYING HATCHET SOLDERING IRON TO SEAM

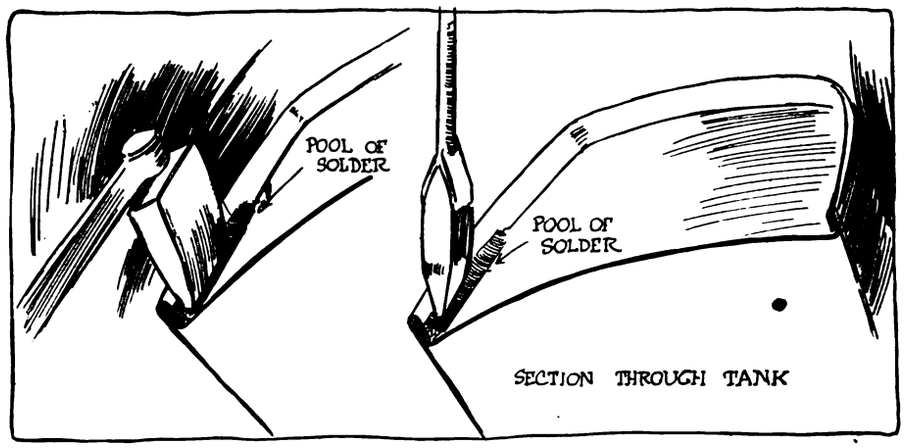


FIG. 4—USING SWIVEL-JOINTED HATCHET SOLDERING IRON AND IRON OF ORDINARY FORM IN APPLYING FILLET OF SOLDER TO ANGLE OF TANK HEAD. TANK IS TURNED AS WORK PROGRESSES

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Upon slowly drawing the iron along the seam, the miniature bath or pool of solder will be drawn along with the iron partly through the adhesion of the melted solder to the tinned faces of the soldering iron and partly by turning or rotating the tank so that the particular section of the seam being soldered at the moment is the lowest.

The result of this method of thoroughly heating the seam while soldering would be the strongest soldered seam possible, inasmuch as the folds of the seam would be united by the thin film of solder which would have been caused to penetrate and unite in the strongest manner possible with solder the closely pressed together folds of the seam.

The alternative method of merely loading the mass or fillet of solder to externally seal the seam as in Fig. 2, bears no comparison with the "sweating" process.

The almost unavoidable wrinkles or other imperfections in making or closing the folded seam may, however, cause the

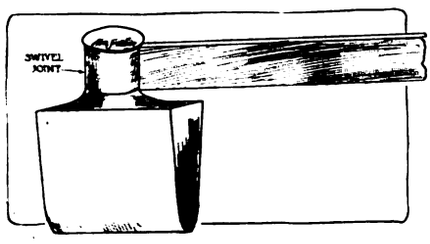


FIG. 5—HATCHET IRON ATTACHED TO HANDLE BY SWIVEL JOINT

stronger or "sweated" job to look rough and unfinished. Therefore it is for finished appearance only that after sweating the seam the fillet of solder should be applied by soldering the seam all around the second time with the application of a much lesser degree of heat, using lighter soldering irons, if available, for the purpose of applying a fillet of smoothly laid solder to the previously sweated seam.

It will be found rather difficult without considerable practice in forming the fillet, to produce a smooth-looking job which will not have somewhat the general appearance of Fig. 7, in which it can be seen that the soldered fillet forms a series of straight lines and angles.

There are several reasons for this, but description, it is feared, will fail to make them all clear and to indicate exactly how they can be avoided. One reason is that in soldering the fillet too long a section is soldered at one application of the iron, possibly aggravated by not rotating the tank at sufficiently short intervals of the soldering process. Each straight line in Fig. 7 represents

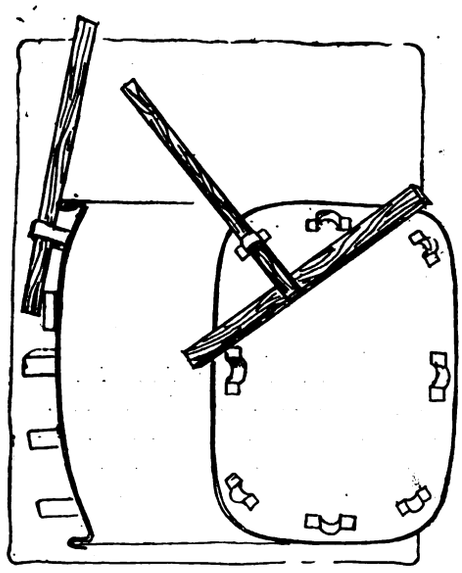


FIG. 6—METAL LOOPS SOLDERED TO TANK AND LEVER INSERTED IN LOOP

a different rotated position of the tank at which solder was applied and melted to the length of the line and allowed to cool.

As may be by now understood, soldering the described fillet calls for just the reverse method of applying heat to that of the "sweating" process in which as much heat as possible is utilized and transmitted to the seam in all directions adjacent to the soldering iron.

To avoid having the job resemble Fig. 7 and as smooth-looking as possible, the soldering iron used should have a blunt or rounded point and rounded corners and should be held nearly perpendicular to the seam at the actual point of applying the fillet.

Then as short a length of fillet should be soldered as may be found possible and without remelting the finished soldering immediately preceding that in hand at the moment.

Considerable attention is also required to frequently rotating the tank slightly for each new position of the soldering iron. The workman in this particular must rely mainly on his own judgment but it may assist him in a general way to state that at the portions of the seam which are of comparatively small radius no more than a half-inch of soldered fillet should be in a melted condition at one time and possibly at the straighter portions of the seam this may be increased to three-quarters of an inch or an inch.

Figs. 1 and 3 indicate convenient means of supporting tank and suitable inclinations for the different processes described.

In testing a repaired gasolene tank it can of course be wholly or partly filled with gasolene and stood in varying positions in the search for possible leaks.

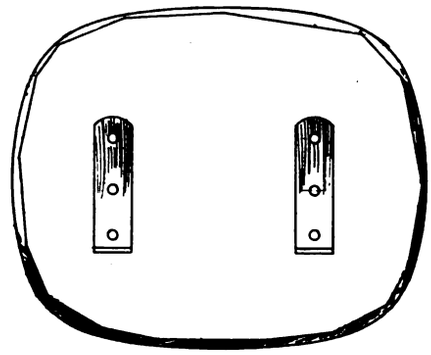


FIG. 7—ANGULAR FILLET OF SOLDER, INDICATING LACK OF SKILL

This consumes considerable time, however, and where considerable work of this nature is anticipated a testing outfit on similar lines to that described and illustrated in testing radiators in Motor World of March 19 may be used. This is a sheet metal tank large enough to to hold sufficient water to completely submerge the largest size of gasolene tank with an air pump, air pressure gauge and suitable fittings for connecting pumps and gauge to the tank.

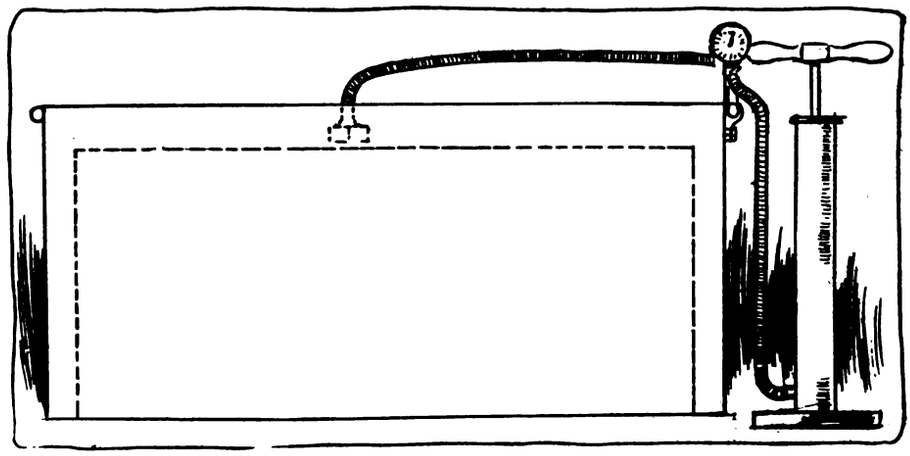


FIG. 8—APPARATUS FOR TESTING REPAIRED GASOLENE TANKS FOR LEAKS. TANK IS SUBMERGED IN WATER AND AIR PUMPED IN. BUBBLES SHOW LEAKS IF ANY EXIST

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Should Dealers Keep Open in the Evening?

Some Say "Yes,"—They Give Their Reasons—What Do You Say and Why?

One of the questions among motor car dealers today in the larger cities is as to the advisability or necessity of keeping salesrooms open at night. A poll of the New York City dealers, as outlined below, discloses that at least in that city, there is no real demand for night opening and that it is ineffective except in the case of some of the dealers in low-priced cars. Whether in the end even the low-priced car dealers would not be just as well off in the matter of sales should they confine their salesroom operations to the day time, is a question which, as a rule, they admit is open to discussion.

Among the dealers in cars priced at $1,000 and less there is a diversity of opinion as to the value of opening nights; on the other hand, the dealers in cars selling for more than that amount are practically a unit in the conclusion that night opening is entirely devoid of results.

Definite Figures Generally Lacking.

Those dealers who do open at night, while claiming to be satisfied that it is warranted by the results, are, unfortunately, nearly all unable to furnish definite figures to show what results have actually been obtained through the night opening.

It may, perhaps, therefore, be safe to assume that at least some of the sales which they feel should be attributed to the night opening are really the result of their day-time selling.

Included among the list of those who do not now open at nights is a fair percentage of dealers who conscientiously gave the plan a trial and kept a check on the results. It is perhaps fair to assume that the judgment of that class is a better criterion than that of some now keeping open and crediting to it some selling results which are, in fact, untraceable to any source because no records have been kept.

Those dealers who have tried out the plan and abandoned it as non-productive found that their night callers were made up of a mixed class consisting of beggars, strangers seeking information about matters other than cars, time-killers and others who could not by any stretch of the imagination be possibly considered as prospects.

A similar situation to that of New York prevails in Philadelphia, but in that city the night closing is the result of the decision of associations of business men to have definite times for closing on certain important business streets and also to fix the time to which stores are to be kept lighted. Under their agreement, the salesrooms are closed at approximately 6 o'clock and the lights are kept going until 11.30, thus placing them all on the same footing.

Price of Car Has Its Influence.

In the class of cars priced at about $1,000 and under, 5 of the 8 dealers seen close at 6 o'clock. Of those, 4 have never tested the plan of opening at night, as they did not think it would pay. The one who tried the plan abandoned it because it proved an unnecessary and unproductive task for the salesmen, although there was but one on duty and the men on the force undertook the night work in rotation. Charles E. Riess & Co., distributor of the Hupmobile, keeps its salesroom open until 9 o'clock. The members of the company state that they are satisfied that the returns warrant their doing so, although they cannot fix the number of prospects obtained at night nor the percentage of sales to them. Their principal thought is, however, that keeping open gives to the class of prospects who are unable, because of business matters, to view the car in the daytime an opportunity to see it at their leisure at night.

Saxon Man Shuts Up at 10 P. M.

L. A. Van Patten of the Saxon keeps open until about 10 o'clock. He states that they obtain a number of prospects. As they are not following up their prospects very carefully because the great demand for their cars does not warrant it, he cannot state just how valuable these night prospects may really be.

During the spring and fall selling seasons the salesroom of the Buick company is kept open until 11 o'clock with one man on duty. They explain that, while they are unable to trace any direct results to the plan, they think it advisable to extend the accommodation to their customers. The plan entails no additional selling expense, as the salesroom is kept lighted throughout the year until 11 and the men on duty during the period when the room is opened at night are paid only a commission.

In the class from $1,000 to $1,500 the two dealers called on both close at 6 o'clock and stated that as they have never heard of any other dealers handling that priced car who made a success of attempting to sell at night they have never tested the plan.

Twelve dealers in cars ranging in price from $1,500 to $2,000 were seen, and of that number only one keeps open at night. The others close at 6 o'clock. The general feeling among them is that persons able to purchase cars costing $1,500 or more can find ample time to see them during the daytime. In fact, that as a rule it would be far easier for them to call during business hours than to forego social engagements for the purpose of calling in the evening.

Has No Reason for Staying Open.

One who closes states that as the output of his factory is limited he has no difficulty in selling during the regular business hours all of the cars that he can get hold of and that he does not care to promote sales unless he is sure he can deliver. Another who closes explained that a few years ago the plan had been given a trial and abandoned because it showed absolutely no returns.

The salesroom of the Hudson was the only one in this class of cars which was found to keep open at night, and they close at 9 o'clock. Between 6 and 9 one man is kept on duty, and while there are but few inquiries it is considered a service and advertising feature and the added expense is only nominal.

Twenty-one dealers in cars selling at more than $2,000 were seen and 17 of them close at 6 o'clock and 3 at 5:30. Of this entire number of dealers only 2 have ever tested the plan of opening at night. One of them stated that when motor cars were new and their dependability was a matter of question, he kept open until 10 o'clock, but in recent years this has been abandoned because there were no callers who by any possibility could be considered prospective buyers.

Another—the Oldsmobile dealer—kept open during the days when his store was on Broadway, but notwithstanding that it was next to one of the large theaters

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catering to the class of people from whom he obtained his prospects, the results proved his night opening amounted to absolutely nothing.

H. E. DeLamater, sales manager in New York of the Moline-Knight, states that during the busy selling season he keeps open but cannot trace any actual results to the night opening.

To sum up, it may be said that there are a few dealers in low-priced cars who believe that by keeping open at night they can cater to a certain class of prospective buyers of their cars who could not conveniently inspect them during the day. They are not, however, in a position to produce any facts or figures which will bear out the contention that the plan produces either sales or good prospects.

On the other hand, there is that large class of dealers in cars of all prices who contend that it is a matter of fairness to their salesmen and at the same time good business policy to close at the end of what is regarded throughout the business world as a working day. This permits the salesmen to relax after their work or to plan for the next day's efforts, or, should they prefer, to continue their selling efforts but without a feeling of compulsion.

Filling in the Time Between Seasons

Many Dealers Make It a Time of Clean-up—Odds and Ends of Business Are Cared For.

With the sale of motor cars, as with the sale of many other kinds of merchandise, there comes a time when the rush of work falls off—a between-seasons time, or to be more specific, a slack time, when practically all of the existing models of cars have been disposed of and the ne wmodels have not yet put in an appearance from the factory.

Valuable Time to Wide-Awake Man.

To the wideawake sales manager this slack time is a valuable time; it permits him a breathing spell in which to clean up. He may either clean up his selling methods, polish away the rough spots, of and the new models have not yet put a manner to facilitate future sales.

Some dealers really do take advantage of the slack season for purposes of this kind, but, as regrettable as it is, it nevertheless is a fact that others, less wideawake to the possibilities of the business, overlook this valuable breathing spell; the sales force is cut down; only a few salesmen are kept on to take care of what little business there appears to be.

That is the rub. There appears to be little business whereas there is big business for the man who will go out in search of it.

In this connection it is interesting to note that several of the most successful dealers in New York pay little or no attention to the so-called slack season. Their men work right along and prosecute their business actively.

The A. Elliot Ranney Co.. New York Hudson distributer, for example, pays no attention whatsoever to the fact that the active selling season has gone by. For its salesmen, the active selling season never goes by. The salesmen proceed to develop sales just as if the salesroom were full of cars.

The men are given their allotments of names of prospects and are required to follow them up and report regardless of the fact that such orders as might be taken might necessarily be for future delivery. So far as the salesmen are concerned, orders for future delivery are just as good as those which may be filled immediately on receipt. Further, they are required to make calls on the owners to whom they have sold cars.

Two-fold Purpose in Calls.

These calls serve the two-fold purpose of ascertaining whether or not the cars are giving satisfaction and to permit the correction of difficulties through the service department, and also to interest the owners in new cars of the forthcoming models.

The C. T. Silver Motor Co., New York distributer of the Overland and Peerless cars, leave it to the judgment of their salesmen whether or not they will call on the owners to whom they have sold cars, but should they decide not to do so the names are turned over to other salesmen, who work on them for the purpose of effecting sales of new cars. At the same time they keep an eye open for cases where cars are giving unsatisfactory service. Whoever may be handling these owners' names, however, the slack season is used to promote resales to them.

The available supply of Overlands is, as a rule, sufficient to permit the manufacturers to supply the dealers with cars to carry them over until the new models are ready. That makes it possible for the salesmen to ignore the seasons and to go right ahead.

Touch "High Spots" When Busy.

The same condition is true of a great number of dealers, the principal difference between the busy and the slack seasons being that during the former the time of the salesmen is largely devoted to the "high spots" and there is but little, if any, attempt to develop prospects which do not promise to turn readily into car buyers.

When the slack seasons, come, however, the situation is different, and the men go over their names with the aid of the sales manager with the utmost care. By this plan it is possible to value the names of prospects and to eliminate those which it is found after careful development work do not promise to be come buyers. In that way when the busy season comes around again they have all ready at hand a list of the names of persons who it is reasonably certain are going to buy cars and with the proper selling efforts they can be sold.

Off Seasons Are Clean-up Time.

The off seasons are clean-up time, while the busy seasons represent the period of concentration of selling efforts. It is well understood that the value of the list of prospects depends almost entirely upon keeping on it only those names which are really prospective buyers. To give value to the list it is, therefore, essential continually to keep the salesmen at work on it, to examine very carefully the reports which they make and from them to decide whether or not the prospect is worth working on further.

Should the reports of the salesmen fail to disclose this information, it is the customary practice for the dealer himself to obtain it by calling on the prospect, to have the salesman holding the name make a further effort to get it or to have some other salesman call on the prospect and thus get a line on him from a new viewpoint.

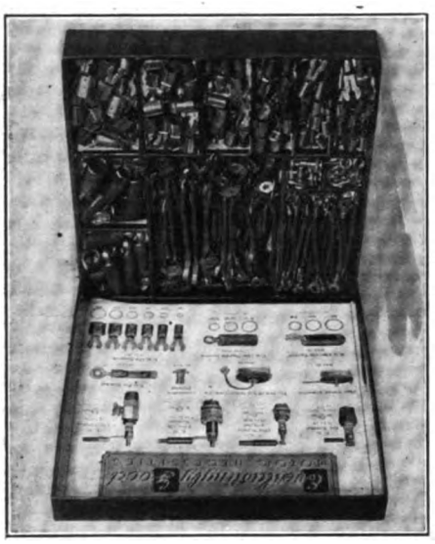
During the slack seasons it should also be the practice to have the salesmen devote some of their time to uncovering the names of new prospects. That is done in various ways. One fruitful method is to turn to the owners.

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RECENT DEVELOPMENTS in ACCESSORIES

Display Case For Terminals.

To provide dealers and jobbers with a convenient method of displaying their Everlastingly Good terminals and battery connectors, the Emil Grossman Mfg. Co., Bush Terminal, Brooklyn, N. Y., makes up an assortment of these goods



GROSSMAN TERMINAL DISPLAY CASE

and packs them in an attractive display case 10 inches long and 10 inches wide by 1¾ inches deep. The case is substantially made, covered with leatherette and has a hinged cover on the inside of which are illustrations of the various terminals and connectors, showing how they are used. Under the illustrations are templates in which cables or wires can be tried.

The case contains six sizes of clip terminals, four of each; three sizes of fibre magneto clip terminals, four of each; six combination terminals; 50 plain battery connectors, and 50 Holdfast battery connectors. The contents total $14 at list price, but the outfit is sold to jobbers and dealers at practically the priceof the goods in bulk.

Shock Absorbing Cantilever Spring.

A spring for motor car suspension in which it has been sought to combine the good qualities of the cantilever type with those of the helical spring, has been placed on the market by the Garden City Spring Works, 2300 Archer avenue, Chicago. The main member of the spring is of the cantilever form, but its forward end—that is, the part forward of the trunnion—is very short and stiff. To compensate for the lack of resiliency at this point there is introduced a helical spring, as the accompanying illustration shows, carried on a bracket.

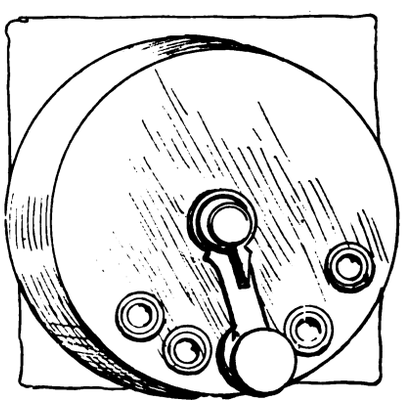
The helical spring is compound, there being one spring within the other, and the spacing is so effected that they cannot come together and squeak when moving. The makers state that the combined capacity of the helical springs is equal to three times the weight of the car they are designed for; they have but a short movement, though the long arm of the spring moves a very considerable distance as compared to the motion of the helical spring.

It is claimed by the makers that the weight of this spring is much less than of any other spring of equal capacity; that the period of vibration is very low, about 60 per minute; that recoil is effectually checked; that side swaying and rolling are eliminated, and that the riding qualities are exceptionally good.

Automatic Current Regulator.

It not infrequently happens, in cars in which magneto current is used for lighting purposes, as, for instance, in the Ford, that when the engine is raced the current intensity rises to such a point that the lamps are burned out. To prevent such an occurrence by automatically cutting down the current when the amount generated is excessive, the American Battery Co., Chicago, has placed on the market the Abco Lite-controller shown in the accompanying illustration. The appearance of the device is similar to that of a five-point switch and, in fact, it acts as a switch as well as a regulator. It is attached to the dashboard and is wired in the same way is the regular lighting switch.

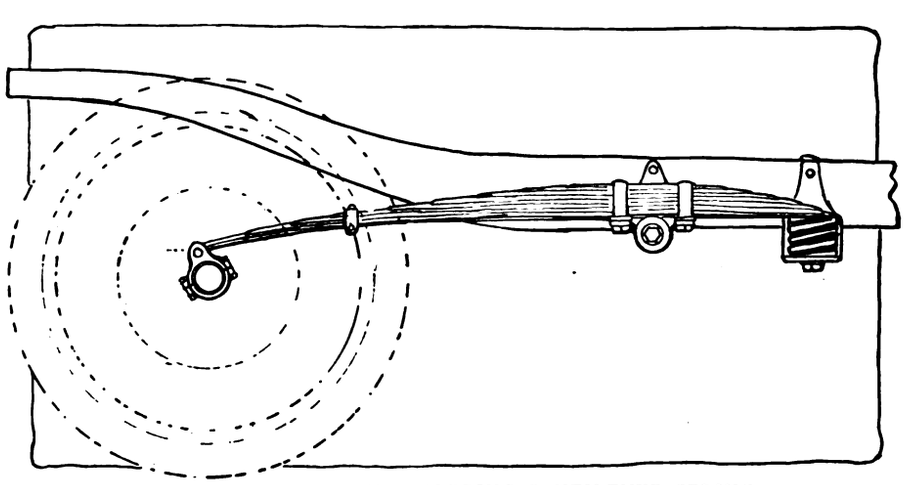
The regulator is so designed that the flow of current through it sets up a retarding or choking effect which increases as the flow of current increases. At ordi-



ABCO LITE-CONTROLLER SWITCH

nary rates of flow the resistance is so slight as not to interfere with the flow to any appreciable extent; but the resistance keeps pace with the current increase and the resistances are so calculated that the volume of current passing through is practically uniform.

The different switch contacts provide for different adjustments to suit various machines and their individual requirements. The controller is a little less than 3½ inches in diameter.



GARDEN CITY SHOCK ABSORBING CANTILEVER SPRING.

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In Salesroom and Garage

Shenandoah, Ia., is the possessor of one of the largest and most complete garages in the state. It is operated under the style Piper Garage, has accommodations for 80 cars and includes a workroom, 30 x 100 feet, women's rest room and other innovations. In the sales department are stocked the Apperson Jack Rabbit, Maxwell and Reo cars.

The Auto Kraft & Garage Co. has embarked in a general garage business at 76-86 Forest avenue East, Detroit, Mich. It is located in a three-story structure, 120 x 60 feet, and wil laccommodate 75 cars. Virgil Oldberg, the president and general manager, for the last two years was factory service manager for the Hudson Motor Car Co.

F. W. Rouesche has purchased the interest of E. M. Grady in the Grady-Rouesche Motor Car Co., Salt Lake City, Utah. No change will be made in the business of the company, which has the agency for the Lozier car.

Joseph Fratus and William Hurd have purchased the tire repair shop of Water street, Plymouth, Mass., from N. J. Wentworth and will continue the business at that address.

Edward F. Bartling is manager of the new branch of the Auto Tire Sales Co. at 2916 Locust street, St. Louis, Mo. The company will job United States tires.

J. Paul Jones and Dudley Doyle have organized the D. & J. Machine Shop, Grand Rapids, Mich. They have located on Hall street, where a general motor car repair business will be conducted.

Under the style Auto Top & Trimming Co., W. W. Williams and Guy P. Apt, formerly of Detroit, have started in a general motor car supply business at Toledo, O.

D. W. Kemp, of the Lozier Motor Car Co., Detroit, has established an agency at Deadwood, S. D.; it will handle Lozier cars in Meade, Butte and Fall River counties.

The $25,000 Mission Garage, erected by E. D. Miller and his associates at San Diego, Cal., is now in operation. Special attention will be given to repair work.

The Nashville Motor Car Co., Nashville, Tenn., will occupy the large garage nearing completion on Broadway. The estimated cost is $30,000 and it will be thoroughly modern throughout.

The Lafayette-Smith Co. has opened new headquarters on 4th street, Little Rock, Ark. It will continue to handle Knight cars.

F. W. Williams has purchased the garage and repair-shop of Thonin & Singler, Iron River, Mich., succeeding to Singler's interest in the firm.

The Herrin Supply Co., Herrin, Ill., has let contracts for a garage to cost $8,000; it will be of brick construction, 40 x 200 feet.

Messrs. Gunn & Schmitz have secured the agency for the Kelly-Springfield motor truck in Tacoma, Wash.

A new steam vulcanizing plant has been installed at the Brubaker Garage, Litchfield, Ill. Martin Gaither is in charge.

J. R. Greenwald has secured the agency for Jeffery cars in Cleveland, O. He is located at 6504 Euclid avenue.

MOTOR CAR DEALERS RECENTLY APPOINTED

Place	Car	Dealer
Albert Lea, Minn.	Maxwell	Hellis Auto Co.
Alma, Kan.	Maxwell	G. A. Mueller
Alva, Okla.	Maxwell	Doty & Adams
Arthur, N. D.	Maxwell	Arthur Mercantile Co.
Auburndale, Wis.	Maxwell	Miller Ice & Lbr. Co.
Atwood, Kan.	Maxwell	Youngblood Auto Repair Co.
Barnard, Kan.	Maxwell	H. J. Kibler
Belvidere, Ill.	Maxwell	J. W. Fox & Son
Shelbyville, Ia.	Maxwell	Wort, Friend & Andrews
Brookville, Miss.	Maxwell	Madison Hambrick Auto Co.
Burlington, Col.	Maxwell	Scofield & Hoskin
Burlington, Kan.	Maxwell	Z. T. Grant & Son
Buswell, Neb.	Maxwell	G. R. Key
Canton, Kan.	Maxwell	N. G. Alldritt
Chico, Cal.	Maxwell	J. I. Lewis
Chilhowee, Mo.	Maxwell	Strawsburg & Bugard
Clare, Mich.	Maxwell	A. Roe
Clarkshill, Ind.	Maxwell	McKinney & Mugg Auto Co.
Colby, Kan.	Maxwell	R. E. Jones
Colgate, Wis.	Crow Elk-Hart	J. H. Bluem
Collins, Miss.	Franklin	J. C. Penn
Columbus, Miss.	Maxwell	T. W. Townsend
Cone, Mich.	Maxwell	F. B. Raymond
Corsicana, Tex.	Maxwell	A. R. & M. J. Lewis
Cripple Creek, Col.	Maxwell	W. H. Shideler
Cuddeback, Ida.	Maxwell	James E. Hope
Dana, Ind.	Maxwell	Scott & Stanfield
Elizabeth City, N. C.	Maxwell	B. H. Johnson
Elkhorn, Neb.	Maxwell	Herman J. Schneider
Elmer, N. J.	Crow Elkhart	Jos. E. Smith & Co.
Farmersburg, Ind.	Maxwell	W. D. Bolinger Co.
Forest City, Ill.	Maxwell	J. H. White
Fort Collins, Col.	Maxwell	Howard E. Smith
Franklin Grove, Ill.	Haynes	W. L. Sheap
Gananoque, Ont.	Maxwell	W. J. Gibson
Glasgow, Ky.	Maxwell	C. P. Beatty
Goodland, Kan.	Maxwell	R. A. Kent
Gordon, Neb.	Maxwell	Harry B. De Wolf
Government, Okla.	Maxwell	F. Firebaugh
Great Bend, Kan.	Maxwell	J. A. Pritchard
Green Bay, Wis.	Haynes	Conley-Judd Motor Co.
Guernsey, Wyo.	Maxwell	W. L. Diver
Harrison, Ark.	Maxwell	Frew Saddlery Co.
Hattiesburg, Miss.	Maxwell	Hunter's Auto Repair Wks.
Henrietta, Tex.	Maxwell	J. C. Stallings
Holbrook, Ariz.	Maxwell	Chas. L. Rhoton
Hot Springs, S. D.	Maxwell	Ward A. Stanley
Hoxie, Kan.	Maxwell	Frank A. McIvor
Hurley, Wis.	Franklin	The Twin City Iron Wks.
Iola, Wis.	Franklin	The Franklin Auto Co. of
Jersey City, N. J.	Maxwell	J. Jacob Wacker
Jewell, Kan.	Maxwell	C. E. Ohlinger
Kirkman, Ia.	Maxwell	Edgar Larson
Kiowa, Kan.	Maxwell	Benton & Ives
La Grange, Ga.	Maxwell	Pharr Bros., Childs & Callaway
Las Animas, Col.	Maxwell	T. H. Marshall
Lima, O.	Maxwell	Lima Garage
Long Beach, Cal.	Maxwell	J. S. White & H. W. Judson
Lorimor, Ia.	Maxwell	Orr & Baily
Lyons, Kan.	Maxwell	Lyons Auto Co.
Macomb, Ill.	Maxwell	A. E. Dowell
Manitowoc, Wis.	Haynes	Marcus J. Rappel
Marka, Kan.	Maxwell	Holechek Bros.
Mart, Tex.	Maxwell	W. L. Lowery
McCracken, Kan.	Maxwell	Hollis Motor Co.
Meade, Kan.	Maxwell	Meade Motor Co.
Medicine Lodge, Kan.	Maxwell	W. S. Benefiel Hdw. Co.
Meridian, Miss.	Maxwell	Payne & Stevens
Merrill, Wis.	Haynes	Norman Chilsen
Millbank, S. D.	Maxwell	B. A. Berkner
Millington, Mich.	Maxwell	D. J. Evans
New Market, Ia.	Maxwell	Moneyhaun & Swan
New Milford, Conn.	Maxwell	Arcade Machine Works
North Jay, Me.	Maxwell	A. R & E. N. Kyes
Norton, Kan.	Maxwell	Garrity & Mansfield
Ogdensburg, N. Y.	Franklin	Messrs. Lytle & Murtch
Opp, Ala.	Maxwell	A. T. Dean
Overbrook, Kan.	Maxwell	Radcliff & Son
Palmer, Neb.	Maxwell	Nicholas Bros.
Paisley, Ore.	Maxwell	J. P. Cruzan
Paola, Kan.	Maxwell	Lehr & Gardner
Paris, Tenn.	Maxwell	D. L. Burton
Pomona, Cal.	Maxwell	Frank A. Moore
Poole, Ky.	Maxwell	Poole Motor Sales Co.
Pontiac, Ill.	Haynes	J. P. Cook & Co.
Port Arthur, Ont.	Franklin	D. Boureau
Port Jervis, N. Y.	Maxwell	Rutan Auto Co.
Port Richmond, S. I.	Maxwell	I. A. Silvie, Jr.
Prescott, Ia.	Maxwell	C. R. Boyer
Prospect, Ky.	Maxwell	Gurnett S. Dick
Racine, Wis.	Maxwell	Spencer Hall
Random Lake, Wis.	Case	Wm. C. Mertz
Random Lake, Wis.	Ford	Wm. C. Mertz
Redlands, Cal.	Maxwell	R. M. Morrow
Redondo Beach, Cal.	Maxwell	B. E. Savage
Reedsburg, Wis.	Ford	Townsend & Kinney Co.
Reedsburg, Wis.	Jeffery	Townsend & Kinney Co.
Reedsburg, Wis.	Buick	Townsend & Kinney Co.
Reedsburg, Wis.	Studebaker	Townsend & Kinney Co.
Reedsburg, Wis.	Overland	Townsend & Kinney Co.
Riverside, Cal.	Maxwell	A. N. Barber
Rocky Mount, N. C.	Maxwell	B. H. Johnson
Rolette, N. D.	Maxwell	I. S. Berg & Brother
Roswell, N. Tex.	Maxwell	Cummins Garage
Sac City, Ia.	Franklin	D. E. Hallett
San Bernardino, Cal.	Maxwell	Firth Groesland
St. Charles, Mo.	Maxwell	The St. Charles Garage
Scotia, Neb.	Maxwell	Earl W. Daily
Seneca, Kan.	Maxwell	J. J. Buser Auto Co.
Sentinel Butte, N. D.	Maxwell	C. J. Englund
Shelbyville, Ill.	Maxwell	M. O. Finks
St. John, Kan.	Maxwell	St. John Auto Co
Stewartville, Minn.	Maxwell	F. L. Hodgson
Stockton, Kan.	Maxwell	Geo. E. Taylor
Sylvania, Ga.	Maxwell	Parker & Huff
Tarkio, Mo.	Maxwell	Tarkio Auto Co.
Thomasville, Ala.	Maxwell	Thomasville Mill & Stg. Co.
Tippettville, Ga.	Maxwell	A. B. Tippett Sons Co.
Tocsin, Ind.	Crow Elkhart	A. P. Kelley
Tunnel Hill, O.	Crow Elkhart	Sproull Bros.
Tupelo, Miss.	Maxwell	Tupelo Implement Co.
Valley City, N. D.	Maxwell	Frank Flora
West Newton, Pa.	Maxwell	Adams & Robinson
Wichita, Kan.	Maxwell	Raffety & Rodda
Wilson, Kan.	Maxwell	Weber & Co
Waynesville, Ill.	Maxwell	James & E. L. Dagley

Commercial Cars.

Auburn, Me.	Koehler	Chas A. Kimball
Clinton, N. J.	Koehler	Frederick Neuhaus
Falmouth, Mass.	Koehler	Crocker Garage
Galveston, Tex.	Koehler	Jno. Christensen & Co.
Meridian, Miss.	Koehler	E S Curtice
New Orleans, La.	Koehler	Acme Automobile Co.
Springfield, O.	Koehler	Springfield Millwright Co.
Summit, N J.	Koehler	E F Anderson
Washington, Pa.	Koehler	Standard Auto Co.
Worcester, Mass.	Koehler	Whalen Bros.
Youngstown, O.	Koehler	Regal Sales Co.

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The Week's Incorporations

Stamford, Conn.—Enterprise Tire Shop; capital $6,000.

Brockton, Mass.—Sterling Motor Car Co.; capital $500,000. Corporators—G. A. Lewis and others.

Norwalk, Conn.—Hardware & Auto Supply Co.; capital $25,000; hardware and motor car supplies.

Boston, Mass.—No Ro Motor Works Co.; capital $10,000. Corporators—Thomas J. Colbert and others.

Galion, O.—Galion Mount Gilead & Cardington Motor Transit Co.; capital $20,000; to operate a motor transit line.

South Bend, Ind.—League Tire Co.; capital $250,000. Corporators—William P. Turey, Ross J. Miller, M. Brunk.

Louisville, Ky.—Electrical Garage Co.; capital $25,000. Corporators—George G. Bader, Frank S. Guerbacker, J. W. Button.

New York, N. Y.—Buick Auto Repair Co.; capital $5,000. Corporators—Wm. F. Fane, Geo Macpherson and Jos. D. Kelly.

Hibbing, Minn.—Range Motor Service Co.; capital $50,000; general motor car business. Corporators—S. R. Kirby and others.

Akron, O.—Windshield Clear Co.; to manufacture liquid for keeping glass clear. Corporators—William J. Boer and others.

New York, N. Y.—Jumel Garage Corporation; capital $10,000. Corporators—W. P. Powell, J. J. Jansen, Jr., and T. S. Buckingham.

Nyack, N. Y.—Rockland County Sales Co. Inc.; capital $5,000. Corporators—Thos. A. S. Beattie, Whitney Beattie and others.

New York, N. Y.—Smildsin Auto Co., Inc.; capital $5,000. Corporators—Gustov Smildsin, Sidney L. Wise and Bernard Naumberg.

Bedford, Ind.—M. C. M. Motor Co.; capital $10,000; dealer. Corporators — Walter M. Mathews, Luther Cobb, Ezra L. Morris.

Springfield, Ill.—Lawndale Tire & Vulcanizing Co.; capital $2,500; tire, repair and vulcanizing business. Corporators—P. F. Dreffein and others.

Brooklyn, N. Y.—Wm. S. Campbell Garage Co.; capital $1,000. Corporators—Wm. S. Campbell, Henry Hymans, Jr. and Phil H. Sheridan.

South Bend, Ind.—League Tire Co.; capital $250,000; motor car accessories. Corporators—William P. Turey, Ross J. Miller and M. Brunk.

Indianapolis, Ind.—Fourteenth Street Garage; capital $2,000; to operate a garage. Corporators—H. R. Littman, W. T. Clore, Arthur Littman.

Wilmette, Ill.—Wilmette Garage; capital $2,500; general garage business. Corporators—George C. Orr, Girard A. Ellington and Edith Tufty.

San Francisco, Cal.—Howard Garage & Shop, Inc.; capital $125,000; to operate a garage and repair-shop. Corporators—F. H. Howard and others.

Tonawanda, N. Y.—Echo Motor Co., Inc.; capital $10,000; manufacture motors, etc. Corporators—Chas. S. Orton, Geo. H. Houck and August Neillie.

Brooklyn, N. Y.—Universal Automobile Equipment Co., Inc.; capital $1,000. Corporators—Edw. Birkle, Jr., Austin Moeller and Percy Moeller.

Indianapolis, Ind.—Metal Auto Parts Co.; capital $50,000; to make motor car parts. Corporators—B. E. Thompson, W. B. Austed, George H. Scott.

New York, N. Y.—Hudson Motor Car Co. of New York, Inc.; capital $1,000. Corporators—Edwin S. Steese, Samuel S. Toback and Walter W. Griffith.

Chicago, Ill.—Middle West Automobile Corporation; capital $1,000; to deal in motor cars. Corporators—William H. Oliver, Orle R. Moril, August Beltzner.

Toledo, O.—Wight Mfg. Co.; capital $20,000; to make motor car supplies. Corporators—A. V. Wight, A. C. Faulkner, George Sace, Edward Scanlon, F. E. Calkins.

Bedford, Ind.—M. C. M. Motor Co.; capital $10,000; to manufacture and sell motors and motor cars. Corporators—Walter M. Mathes, L. Cobb and E. L. Morris.

Philadelphia, Pa.—Lasso Auto Signal Lamp Co.; capital $100,000; to manufacture, sell and deal in lamps for motor cars, etc. Corporators—Daniel J. Sherman and others.

Springfield, Ill.—United Auto Brokers; capital $2,000; brokerage and commission business, motors, accessories, etc. Corporators—C. G. Blankenship, Frank Carbon and James Bundo.

Kittery, Me.—Mower-Campbell-Hollister Mfg. Co.; capital $2,000,000; to manufacture and deal in all kinds of motor car parts and accessories. Incorporators—H. W. Foster and others.

New York, N. Y.—Haines Transmission Gear Co.; capital $5,000; manufacture transmission parts for automobiles. Corporators—Gerald F. Haines, Arthur Bergen and Geo. H. Bruce.

Augusta, Me.—King Tire Protector Co.; capital $500,000; to manufacture and deal in tires and tire protectors. Corporators—F. L. Farrington and M. L. Stoke, both of Augusta, and others.

Augusta, Me.—Macnish Electric Co.; capital $500,000; to manufacture and sell ignition systems for motor cars and motor boat engines, etc. Corporators—E. L. Leavitt and others.

Portland, Me.—Harvard Motors & Mfg. Co.; capital $100,000; to manufacture, sell and deal in marine engines and motors of all kinds. Corporators—W. W. Dresser and M. A. Thurston, both of Portland, and others.

Changes in Capitalization.

Akron, O.—Marathon Tire & Rubber Co. to $500,000.

Hartford, Conn.—Blue Ribbon Garage, from $10,000 to $100,000.

Recent Losses by Fire.

Guthrie, Okla.—J. S. Hall; garage damaged. Loss not stated.

Southampton, N. Y.—William Hedges; garage damaged. Loss not stated.

Sioux Rapids, Ia.—Sioux Rapids Auto Co.; garage damaged. Loss $1,000.

Boston, Mass.—Wheeler Garage; 25 cars and building destroyed. Loss $75,000.

Philadelphia, Pa.—Hale & Kilburn Co., 9th street; body building company; plant damaged. Loss, $20,000.

Gary, Ind.—Williams Garage, Washington street; four cars destroyed and building damaged. Loss not stated.

Milwaukee, Wis.—Emergency Garage & Electric Co., 290 5th street; garage and six cars destroyed. Loss, $10,000.

Coming Events

* Indicates sanction by A. A. A.

July 25-26, Belgium—Royal Automobile Club of Belgium's Belgian Grand Prize 2½ and 4-liter race.

July 30, Aug. 1-3, Galveston Beach, Tex.—Galveston Automobile Club's racemeet.*

Aug. 2-9, Grenoble—Automobile Club of France's six-day motorcycle and cyclecar reliability contest in French Alps.

Aug. first fortnight, Auvergne, France—L'Auto's Coupe de L'Auto 2½-liter race.

Aug. 16, Le Mans, France—Automobile Club de la Sarthe's Coupe Internationale light car race, 1 liter, 400 maximum cylinder area and 350 to 500 kilos weight.

Aug. 17, Le Mans, France—Automobile Club de la Sarthe's Grand Prize de France for 4½-liter cars.

Aug. 21-22, Elgin, Ill.—Road races under the auspices of the Chicago Automobile Club.*

Aug. 23, Auvergne, France—Coupe de l'Auto Race.

Aug. 27, Brooklands Track, England—Annual Automobile Race.

Aug., Russia—Road race; Coupe de l'Empereur; 2,000 miles.

Sept. 6-7, Brescia, Italy—Automobile Club of Italy's 4½-liter Grand Prize.

Sept. 7, Providence, R. I.—Track Racemeet under the auspices of F. E. Perkins.

Sept. 7-14, Indianapolis, Ind.—Automobile Show, Indianapolis Automobile Trade Association.

Sept. 10-15, Berlin, Germany—German 4½-liter race.

Sept. 12, Hamline, Minn.—Minnesota State Agricultural Society's track racemeet.*

Sept. 14, Milwaukee, Wis.—Track racemeet under the auspices of the State Board of Agriculture.

Sept. 18-19, Hutchinson, Kan.—Kansas City State Fair track racemeet.

Sept. 26, Brooklands Track, England—Annual Automobile Race.

Sept. 26-Oct. 6, Berlin, Germany—Annual show.

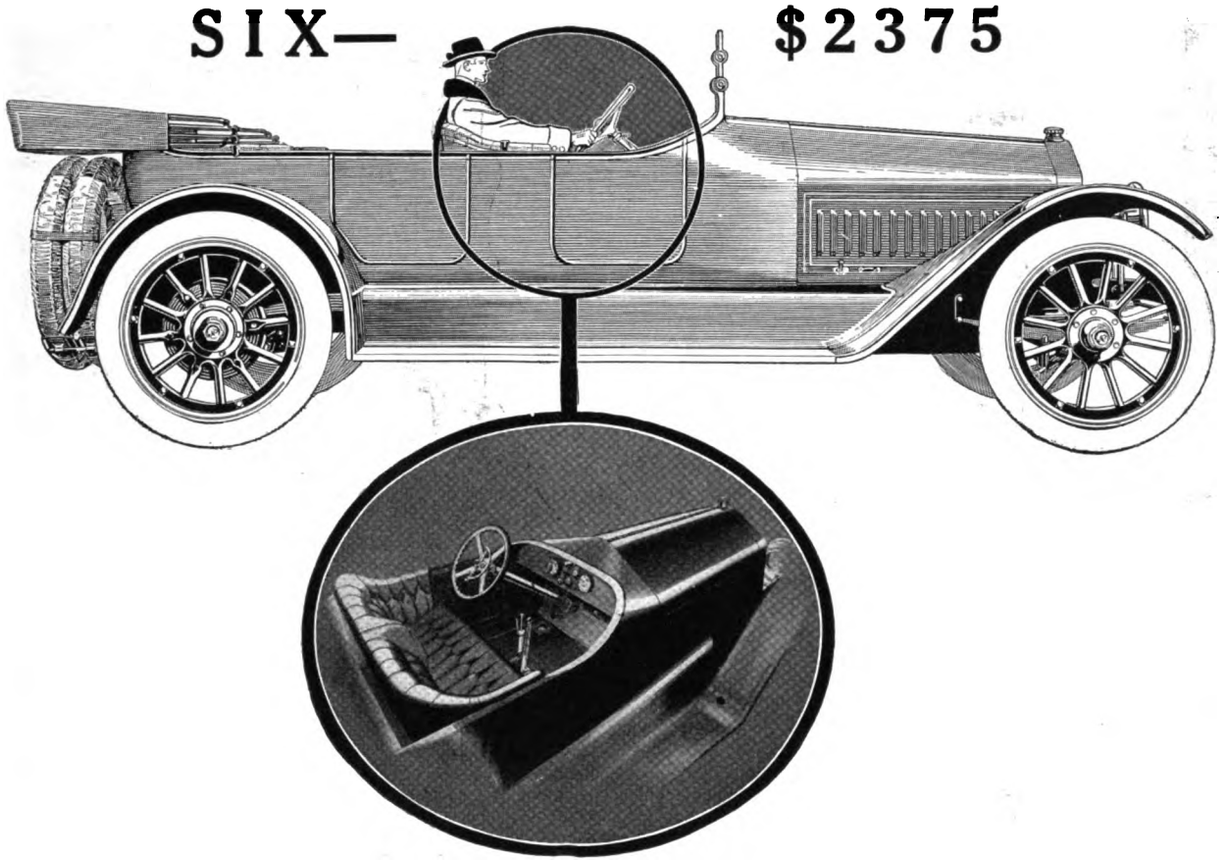
Oct. 2-3, Oklahoma City, Okla.—Oklahoma City State Fair's track racemeet.

Oct. 2-3, Trenton, N. J.—Interstate Fair's track racemeet.

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National

SIX— $2375



Simplicity, Convenience and Ease

Have **you** ridden in, or driven this new National Six? Until you have you simply can't realize that our claims for its ease of riding, graceful operation, and comfort and convenience are not over estimated. If we told you all that owners say about this beautiful car we fear you would think we were exaggerating.

Note the picture in the lower circle. You see the center control, left side drive, convenient and well arranged dash equipment, access to both front doors, and smart sloping lines to cowl and hood.

When we say, "You don't have to raise the hood," we mean that with a National car you get mechanical confidence; we mean, that our fourteen years' manufacturing success warrant your putting faith in our engineering achievements. We put the right material in the correct place; we give you performance instead of mere specifications; we give you results and freedom from having to go over the car with a "fine tooth comb" to make sure there are no mechanical mistakes in it. We say that with a National you get 100% pleasure and service, because of the fact that your car is reliable and does not cause you worry about its operating mechanism.

The driver of a National does not have to worry about what is taking place beneath the hood or under the seat. His attention is required no farther than what you can see in the picture in the circle above; the wheel, levers and instrument board. The rest of the car operates with the driver's unconsciousness, because the National company built and guarantees it.

Five models of famous National 40 cars, $2750 to $3400

Write Us for Illustrated catalog

National Motor Vehicle Co., Indianapolis, Indiana

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"BOWER SAVES POWER"



Monkey Wrench Adjustment

Of what use is it to make a bearing accurate to the 1-5000 part of an inch, and then allow it to be adjusted in a garage or repair shop by means of an ordinary monkey wrench?

The fine accuracy of Bower Roller Bearings cannot be thus impaired since they are adjusted at the factory once for all. Because of the length of the roller and its large diameter, the wear is infinitesimal. Consequently, the bearing never needs adjustment, preserving its initial accuracy indefinitely.

BOWER ROLLER BEARING COMPANY
Detroit, Michigan

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Imitators

The imitator is handicapped. He must see an *original* before he can even *start* to build the imitation.

The best he can ever do is to *copy* outside appearance, color, size, weight and bulk.

HE CANNOT IMITATE THE BRAINS THAT CREATED THE ORIGINAL

The

LBA

TRADE MARK REGISTERED

Battery

is well advertised by its imitators. They give it their O. K. by choosing it as a model to copy.

THE WILLARD LBA BATTERY

THE WILLARD LBA BATTERY

THE WISE BUYERS LISTEN TO THE "JUST AS GOOD" TALK AND THEN BUY THE LBA

WILLARD STORAGE BATTERY CO.

Cleveland, Ohio

New York Branch: 228-230 W. 58th St.
Chicago Branch: 2241 Michigan Ave.
Detroit Branch: 736-740 Woodward Ave.
San Francisco Branch: 821 Monadnock Bldg.
Indianapolis Branch: 318 North Illinois Ave.

SERVICE STATIONS IN ALL PRINCIPAL CITIES IN THE UNITED STATES, CANADA AND MEXICO

1108

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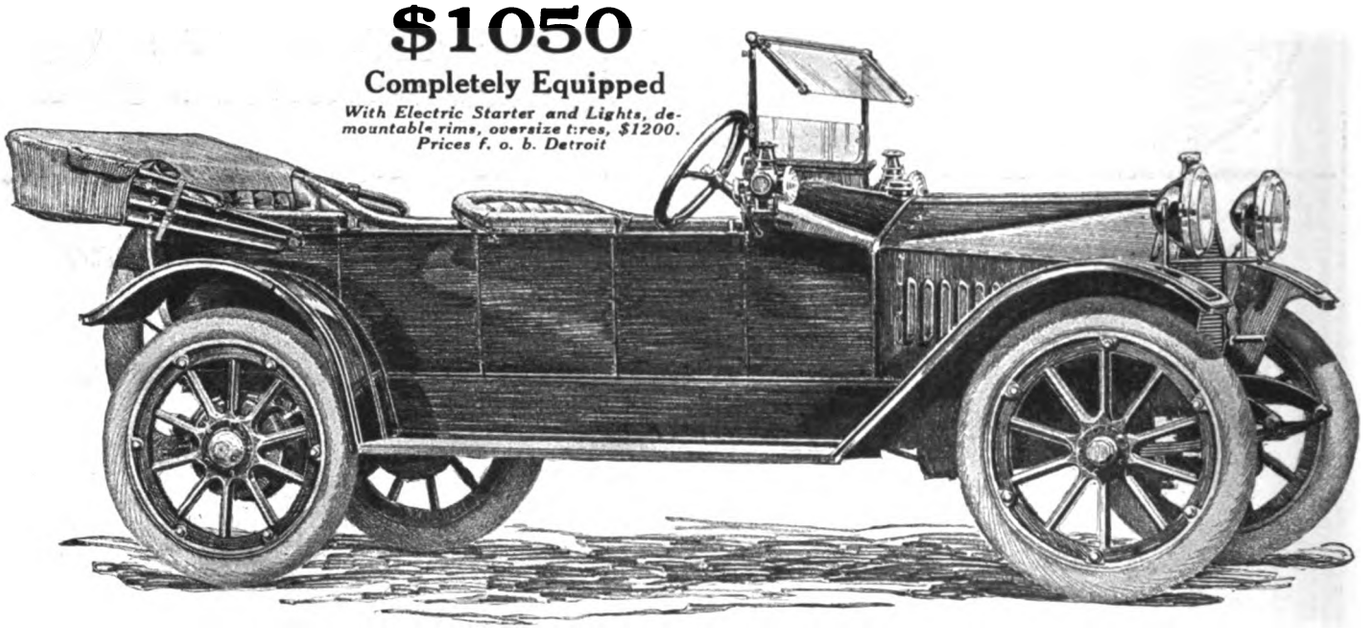
Hupmobile

The car of The American Family

$1050

Completely Equipped

With Electric Starter and Lights, demountable rims, oversize tires, $1200. Prices f. o. b. Detroit



After You Buy, What?

A Hupmobile buyer does not face a future of doubt.

Because the experience of thousands of Hupmobile owners assures him that this car costs less to run.

These owners say to him through us, that repair costs are practically nil.

They say to him that a gallon of gasoline or oil lasts longer; that a set of tires run farther.

They say to him that their Hups are giving continuous and consistent service.

Ask Any Hupmobilist

Any Hup owner, or group of owners, you care to interview will personally confirm this message.

And those who own their second or third Hups—and they are many—will go even farther.

They will tell you that the Hup brings the highest used car prices in proportion to the original price known to owners or dealers.

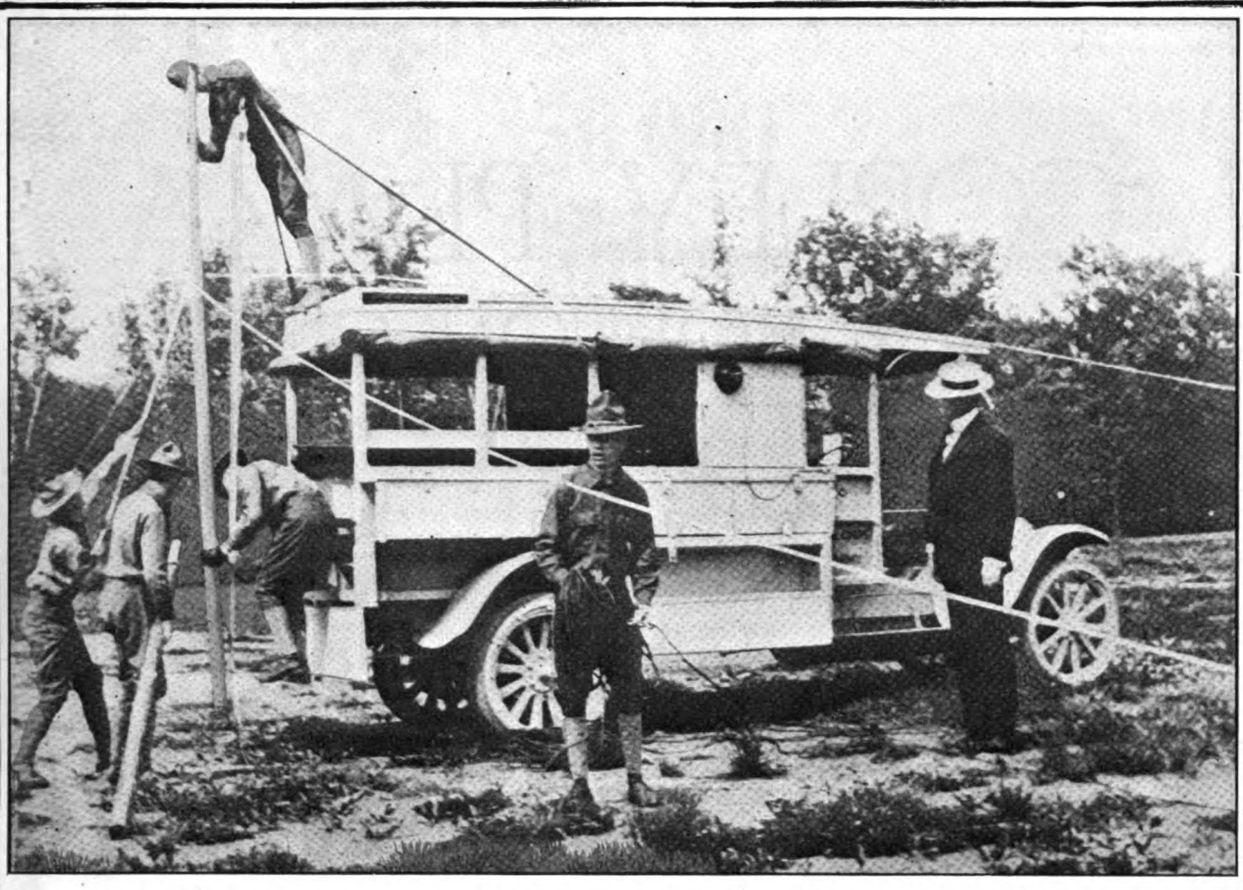
So you see the reason for the Hup's popularity and good repute.

It gives satisfaction because it costs less to run, always runs, and is worth more to sell; and it behaves thus because it is a thoroughly good car through and through.

Ask any Hupmobilist, or the Hup dealer.

HUPP MOTOR CAR COMPANY, 1254 Milwaukee Avenue, Detroit

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Signalling by Wireless

This 1½ ton White Truck is used by the Signal Corps of the U. S. Army as a portable telegraph station. It has two "wireless" equipments — a complete set of Wireless Telegraph Apparatus, and a complete set of

GOODRICH
WIRELESS
TRUCK TIRES

The apparatus can be set up for use in 12 minutes and has a range of 2500 miles, operating by the motor of the truck. Goodrich Tires were specified by the Signal Corps because of their absolute dependability under all conditions.

What Goodrich Wireless Tires are doing in emergency service for the U. S. Army, they will do in every day service for you.

"Motor Trucks of America"—the truck encyclopedia—sent on request.

The B. F. Goodrich Company

Factories:
AKRON OHIO

Branches in All
Principal Cities

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COPLEY-PLAZA
BOSTON

To Bostonians this is the name of their finest hotel.

Visitors who have experienced its comforts and hospitality, speak of the Copley-Plaza as such.

Those who are not acquainted with Boston or its hotels cannot do better than make the Copley-Plaza their head quarters — especially those interested in automobiles and the automobile industry.

E. C. Fogg *Mgr*



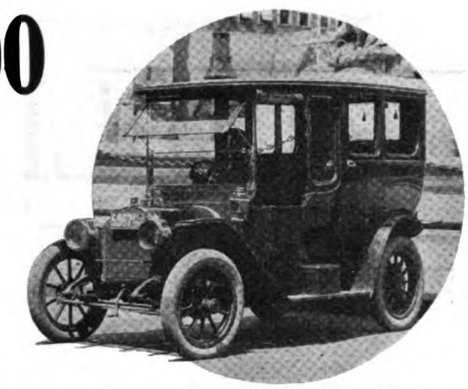
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"The Easiest Riding Car In The World"



Marmon Car No. 1 driven over 200,000 miles

450,000 Miles In Daily Service



Marmon Car No. 2 driven over 250,000 miles

It will pay you to read this letter carefully

It forms one of the greatest documents of automobile history. It is part of the uncompleted story of two cars that have covered a distance equal to 18 times around the world—and are still giving satisfactory service.

Read every word of this letter—

The Horace F. Wood Transfer Company
INDIANAPOLIS, INDIANA.

July 8, 1914.

Nordyke & Marmon Co.,
Indianapolis, Ind.

Gentlemen:

In 1909 I began using Marmon motor cars exclusively in my automobile livery service. I was influenced to adopt the Marmon as my standard equipment, after experimenting with various other makes, being convinced that for the lowest upkeep cost, I could get more and better service from the Marmon. At the present time I have a fleet of eighteen Marmon cars, which are in service 24 hours per day and 30 days per month. I believe we have not lost a day a month with them, on an average.

Car number one has been driven over two hundred thousand miles and car number two has been run over two hundred and fifty thousand miles.

The rest of these cars have gone from twenty five thousand to one hundred thousand miles each and all are in good condition today.

It is commonly stated that the depreciation on a motor car is 50 per cent the first year. I have not a single car in my fleet I would sell for 75 per cent of the first cost as I believe they are as good as when I purchased them. All are working and none are for sale.

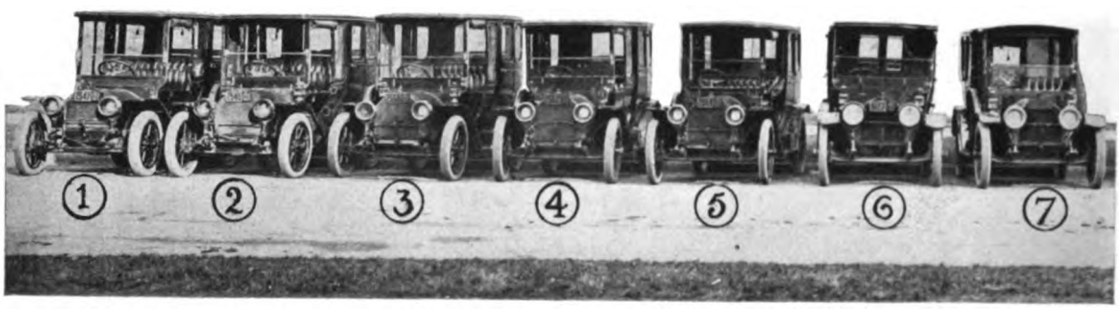
Respectfully,

The Horace F. Wood Transfer Co.,
By Horace F. Wood
Pres.

Sixty Years of Successful Manufacturing

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"The Easiest Riding Car In The World"



PART OF THE HORACE F. WOOD EQUIPMENT OF MARMONS

Here are the records



Dick Riley

—has piloted the old Marmon No. 2 over 80,000 of the more than 250,000 miles it has covered. Riley has taken a number of parties on long trips appraising farm lands and knows about every good and bad road in Indiana, Ohio and Illinois. He says: "I've taken that old Marmon over the worst roads in three states, in Summer and in Winter, but she's never given me a minute's trouble."

No. 1 1909 Marmon purchased in September, 1909. Operated continuously since that time Records show over 1700 days of service and a mileage in excess of **200,000 miles.**

No. 2 1909 Marmon purchased in September, 1909. Used in long road tours in summer and operated continuously in winter livery service. Records July 1st, 1914, establish a record of over **250,000 miles** in service for this car.

No. 3 1909 Marmon, purchased in March, 1910. Established a mileage record of over **100,000 miles.**

No. 4 1909 Marmon, purchased in March, 1910. Operated continuously since that time. Mileage on July 1st, 1914, over **150,000 miles.**

No. 5 1910 Marmon, purchased in August, 1910, and operated in daily service since that time. Mileage in excess of **100,000 miles.**

No. 6 1910 Marmon, purchased in April, 1911, to take the place of car of another make which failed to make good. Has covered over **100,000 miles** in service.

No. 7 1910 Marmon, purchased in September, 1911, and now entering its second hundred thousand miles of service.

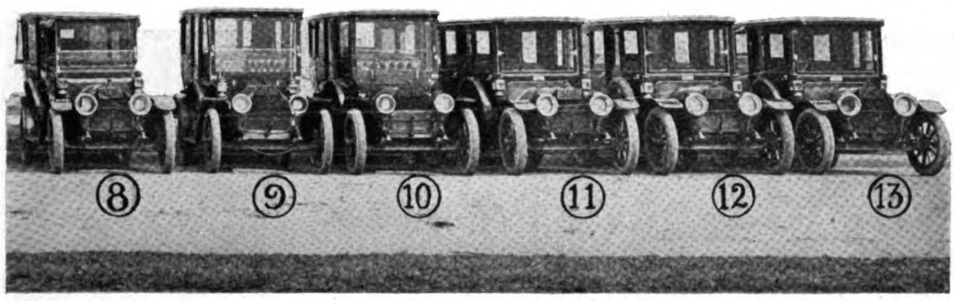
250,000 miles in daily service is to our minds a greater Marmon record than the winning of the first 500 mile International Sweepstakes by the Marmon or any of its other world-famed victories in contests—certainly it's a greater mechanical achievement.

It is the sort of record that means actual, cash value to you in the car you buy or sell.

Sixty Years of Successful Manufacturing

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"The Easiest Riding Car In The World"



Five Other Marmon Cars in the Woods Service Have Gone Over 25,000 Miles Each

TWO OF THESE CARS HAVE GONE OVER 200,000 MILES EACH

Here are the records

No. 8 1910 Marmon, purchased in September, 1911, making the eighth car in the Wood service that has completed over **100,000 miles.**

No. 9 1910 Marmon, purchased in November, 1911, will pass the **100,000 mile** mark in service during the month of August, 1914, at its present rate.

No. 10 1912 Marmon, purchased in April, 1912, and shows a mileage above **70,000 miles.**

No. 11 1911 Marmon, purchased in April, 1912, has passed **50,000 miles** in service.

No. 12 1912 Marmon, purchased in March, 1913, has passed the **50,000 mile** mark.

No. 13 1913 Marmon, purchased in March, 1913, and has completed over **25,000 miles.**

No. 14 1910 Marmon, purchased in April, 1913, has completed over **30,000 miles.**

No. 15, 16, 17 and 18 include four Marmon cars purchased during the present season, one being equipped with roadster body and another with special funeral car body. This hearse recently was used on a 140-mile road trip in a single day. Every one of these cars is making good.



Al. Fisher

—has driven Horace F. Wood's old Marmon Number 1 over one hundred and thirty-five thousand of the more than 200,000 miles it has covered during the past five years. Speaking of this car's remarkable service Fisher says: "A better, sweeter running motor never was made. Why, I'd pit that old car against almost any new car. Another thing about it—it's easy on tires, one set carried it for almost two years through all kinds of roads and weather."

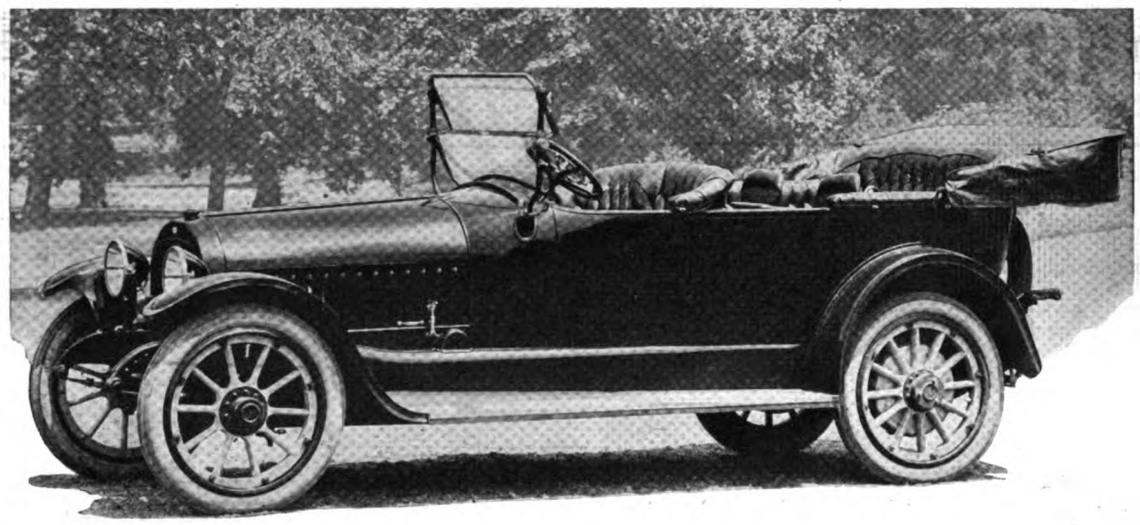
Some propositions may look better ***before*** you buy. It's the proposition that looks best years ***after*** you buy that means real value for the owner and profit for the dealer.

There's a big and important message here for every man who buys or sells a car.

Sixty Years of Successful Manufacturing

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"The Easiest Riding Car In The World"



The New Marmon "41" Medium Six, $3250

The men who designed and manufactured the Marmon cars described on the preceding pages—cars whose records run at 100,000, 200,000, even 250,000 miles of satisfying service—say of this latest Marmon:

"It is the best car we have ever made!"

The milestones of remarkable service stand behind the old Woods cars and hundreds of other Marmons.

The same capabilities are the heritage of this new Marmon.

And this ability to give satisfaction through hundreds of thousands of miles in daily service forms the greatest selling asset any dealer can possess or any buyer desire.

Isn't there real profit in this for YOU?

Marmon "41" is the **only car** with "center fire" "L" head engine—with the wonderful new Bosch lighting and starting system—with the famous Marmon continuous circulating oiling system—with point after point which makes it the **only car** for the man who demands the best.

The complete mechanical description will be mailed you on request.

Figure what it means to handle such a car

When you sell it—it **stays sold.**

It goes on making friends helping you to sell other cars.

Every such car you sell is an asset to your credit as a dealer—a standing advertisement that accumulates prestige with every added year of service.

Its buyer is the man of influence—and this influence comes to your aid in the owner's praise of his car.

There's some big man in your town who wants this car today—who has waited for it.

The profit is yours for the asking

Write NOW!

The Marmon "41"---132-inch Wheelbase, $3,250
The Marmon "48"---145-inch Wheelbase, $5,000

Detailed Information on Request

Nordyke & Marmon Company

Indianapolis **(Established 1851)** **Indiana**

Sixty Years of Successful Manufacturing

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Bosch Lighting and Starting Systems

have distinctive and exclusive features making them especially desirable for manufacturers.

The Bosch Lighting System

THE "Bosch Light" system provides in simple form an ideal lighting system. The exclusive method of control provides light which at all times is free from flickering, flares, or sudden periods of dimness.

Control

The voltage control of the "Bosch Light" system holds the voltage absolutely constant, never subjecting the battery to undue current charges which would tend to strain this unit, thereby eliminating the usual battery troubles.

Lamps

The "Bosch Light" system is complete in its equipment, including side, tail, dashboard and head lamps, the latter being of special design distributing the light rays so as to provide an absolutely even and far reaching light, extending over an unusually wide area.

The Bosch Starting Systems

The starting systems are supplied both in the overrunning clutch, and flywheel engagement principles; the latter method, perhaps, is most practical for the average requirements of manufacturers and is known as the Bosch-Rushmore System. This system lends itself readily to most engine designs and is absolutely self-contained.

Control

It requires no operating rods, or other auxiliary mechanism to bring about a positive start of the engine, accomplishing its entire work: engaging, starting the engine and disengaging, merely by pressing a botton. The operator need exercise no special caution or skill when starting.

The Bosch Ignition System

Completing the electrical equipment are the Bosch Magneto and Bosch Spark Plugs. No engine is as complete in its equipment, or as reliable at its most vital point, as the one employing a Bosch Ignition System.

Be Satisfied—Have Your Car "Electrically Bosch" Throughout

Manufacturers can now obtain Quotations and Delivery Dates by addressing the Main Office.

Plainfield Works
Plainfield, N. J.

BOSCH MAGNETO COMPANY
224 WEST 46th STREET, NEW YORK

Springfield Works
Springfield, Mass.

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"Some Car"
They all say

The first Moline-Knight cars that came through have been in the hands of actual users —standing the every-day grind—for over six months.

Ask any Moline-Knight owner what he thinks of his purchase—and he will reply, "Some Car."

We have canvassed these owners through our branches and dealers and have as yet to find a single owner who is not more than satisfied with his Moline-Knight.

The reputation of this really wonderful car has been spreading like wildfire—not because of any large amount of advertising, but by **actual performance.**

If this car satisfies the user, Mr. Dealer—surely it's a good car for you to handle. At least investigate.

Get acquainted with the MOLINE-KNIGHT

The Moline-Knight is built to give the user distinctiveness without paying extra for reputation.

The Knight type of engine, with the sleeve valve system, represents today the greatest real, substantial advance in gas engine construction.

There are a certain number of men of means in your town—on your list of prospects—who demand a car of refinements at a **sane, reasonable price** for exclusiveness and quality.

You know the class of men we mean—those who demand luxurious comfort without penalizing their bank account. The Moline-Knight is built to satisfy this class.

Matchless throughout

The power is developed from the famous Moline-Knight motor—insuring smooth, positive action, ample power and a flexibility that has never been attained in the old style poppet valve engine.

The seats are wide, deep and comfortable—the upholstering is in keeping with the motor that is supreme in Europe today.

The streamline body is finished with as much care as the best piano.

The getaway is instantaneous—it's the "no-waste and up-keep reduced to the minimum car." No carbon—no valves to clog or grind —less consumption of fuel per horse power—simpler parts, fewer parts, less to get out of order—economy.

The Moline-Knight engine will be a revelation to you—it gives a smooth, even pull, without laboring—its ability to take steep hills on "high"—the velvety feeling of resistless power will make you, too, exclaim, "Some Car."

Price cutting will reduce your profits

No need to tell you here that during the next 12 months you will be up against the worst price cutting war on poppet valved cars the automobile industry has ever experienced.

So in selecting the car you will sell for 1915, **take your time**—"Look before you leap" is a good old tried and true motto.

Your profits will be assured and you will avoid price cutting if you take on the Moline-Knight—because you will have a car that is **different**—a car that cannot be measured as one poppet valve against another.

Moline-Knight to be advertised nationally

There has been a lot of gossip and "knocking" on Knight motored cars on the part of men who took somebody else's word for it—

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but never took the time or trouble to investigate the truth for themselves.

Possibly you have heard some of this gossip—but as a prospective car buyer or a dealer, **it's up to you to investigate right now.**

We **know** what kind of a car we are turning out down here in East Moline—we **know** what the Moline-Knight users say—we **know** what our dealers say—**we know—do you?**

Just to prove to you that we have unlimited confidence in our car—and to help you avoid price competition if you decide to take the agency for the Moline-Knight—to assist you to **sell cars at a profit**—we have entered into a contract with one of the leading advertising companies and set aside a liberal amount of money to be used in a national advertising campaign starting in August.

Number of dealers to be restricted

If you have been reading our announcements you now have our story of the Moline-Knight—"The World's Greatest Motor."

Just as we have carefully planned every detail of building the Moline-Knight, so we have carefully planned our sales and advertising campaign.

We cannot hope to be successful unless our dealers **make money** right from the very first day. That's why we are limiting the number of Moline-Knight dealers. Our plan is to give each dealer as many Moline-Knights **as he can sell**—not distribute our production over a large number and leave him holding the bag because of delayed or non-deliveries.

Talk to us— then decide

If we can't prove to you as a user that the Moline-Knight is the car you should buy—if we can't convince you as a dealer that the Moline-Knight is your one best bet for your next season, at least you have investigated for yourself and **know** the facts—not hearsay.

All we ask is that for your own interest you investigate the Moline-Knight car—the Moline-Knight way of protecting the dealer—the Moline-Knight way of advertising and merchandising their product.

Remember, in writing us **you obligate yourself in no way.**

We are just as particular in regard to the dealer we take on as you are as to the car you are going to sell.

Get in touch with us at once

Simply say, "I am interested—and open to reason."

Then we will either have one of our representatives call on you—or arrange to have you to come here to the factory.

Sit down right now—write us a letter—tell us in **confidence** how many cars you sold last year—what you are up against today in the way of price competition—what your plans are for 1915.

Let's get acquainted for our **mutual benefit.**

And again, take your time about contracting for your next year's line—spend a little time investigating before you sew yourself up.

And don't forget to write that letter to us before you lock your front door tonight.



Moline Automobile Co.
East Moline **Illinois**

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Mosler Vesuvius Plugs



Have no equals for speed and power.

Made to fit any engine, any thread.

Stone Insulation is practically unbreakable.

Unique method of assembly renders Vesuvius Plugs absolutely gas tight and insures perfect adjustment of sparking points.

A.R. MOSLER & Co.
NEW YORK N.Y.

199-R

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POWERFUL INDESTRUCTIBLE AND SURE

Powerful because of faultless design.

Indestructible because of the finest materials.

Sure because of methods and workmanship employed in manufacture.

EXCLUSIVE FEATURE

Note ears on collar.

The only plug that has means for assembly without rotating the insulator.

Washer and ears take up all friction of the nut and give the direct straight pressure which makes the plug absolutely gas tight.



Collar takes up friction of nut.

Collar cannot turn when nut is tightened because ears on collar fit into slots in shell.

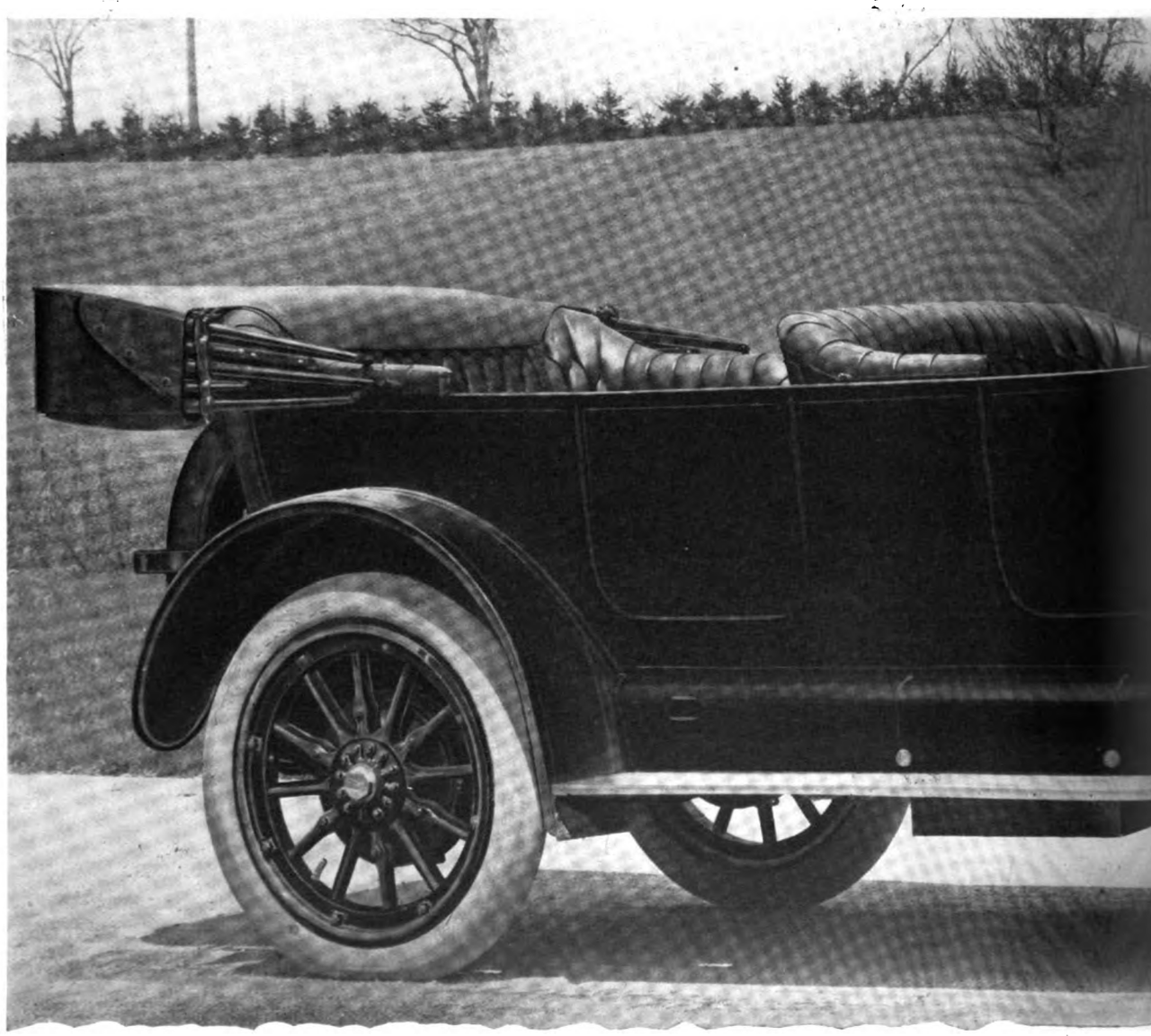
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1915 The New Standard of

We IMPROVED the quality, but we shaved the overhead and selling costs when we REDUCED the 1915 model $400 below its predecessor.

A big, powerful, high grade six cylinder automobile, with the quality of material entering into its construction fully in keeping with its pleasing appearance—note the beauty of the stream-line body,



Premier Motor Manufacturing

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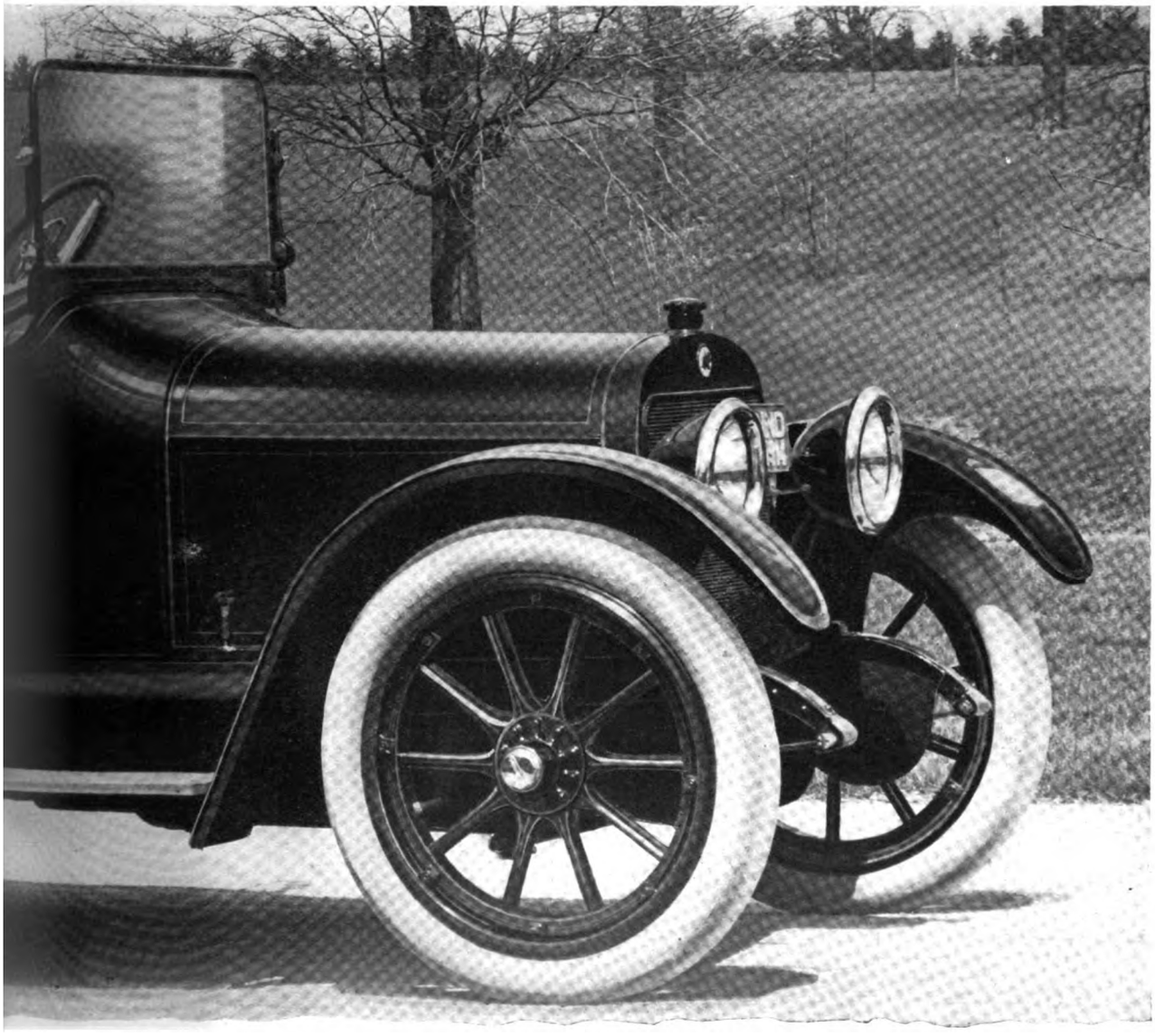
High Grade Car Value

clear running boards and luxury of appointment and finish.

The 1915 PREMIER is a car of distinction and quality, and its ownership affords a source of satisfaction and pleasure—its reputation and prestige places it beyond the pale of the ordinary stock car.

At $2385 it has not a competitor—write for complete specifications.

$2385



Company, Indianapolis

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Cable Address "MAXCO"
WESTERN UNION LIEBER'S AND A.B.C. 5TH EDITION CODES.

MAXWELL MOTOR SALES CORPORATION

AUTOMOBILES

WOODWARD AND WARREN AVENUES

EXECUTIVE AND SALES OFFICE

DETROIT, MICH

June
26th
1914.

THE NEW 1915 MAXWELL "25."

EXTREMELY IMPORTANT TO DEALERS IN AUTOMOBILES.

Between July 15th and August 1st we shall announce,- place upon display and exhibit our new 1915 Maxwell "25," to retail at $750.

We shall begin the distribution throughout the country of this new 1915 "25" model by August 1st.

We confidently expect to be able to build 60,000 of these new 1915 "25" models retailing at $750. within one year.

We shall do all that human endeavor and our immense factory facilities can do to build at least 60,000.

I confidently predict that this new Maxwell "25" retailing at $750. will be the greatest sensation that the automobile world has ever known.

I base this prediction upon the car from the ground up - its chassis; its motor; the lines and size of its body; and the unexpected extra and additional features which will be placed upon this car.

Walter E. Flanders.

President,

Maxwell Motor Co., Inc.

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Follow The Trail Of The Fisk Non-Skid

Dealers: This will be good news to you! We can now meet the demand for Fisk Non-Skid Tires.

Users who adopted the Fisk Non-Skid when it was first introduced became enthusiastic over it. Car owners everywhere wanted this famous new tire that really prevented skidding and gave such remarkable mileage. As a result, the demand soon outgrew the supply.

But now, with trebled manufacturing facilities, we are ready to help the Dealers meet the demand and incidentally make a lot of money.

The Fisk Non-Skid is a perfect protection against loss of traction and side slipping and has the great Fisk Durability and wear.

Write at once to Dept. 23 for Our Dealer offer

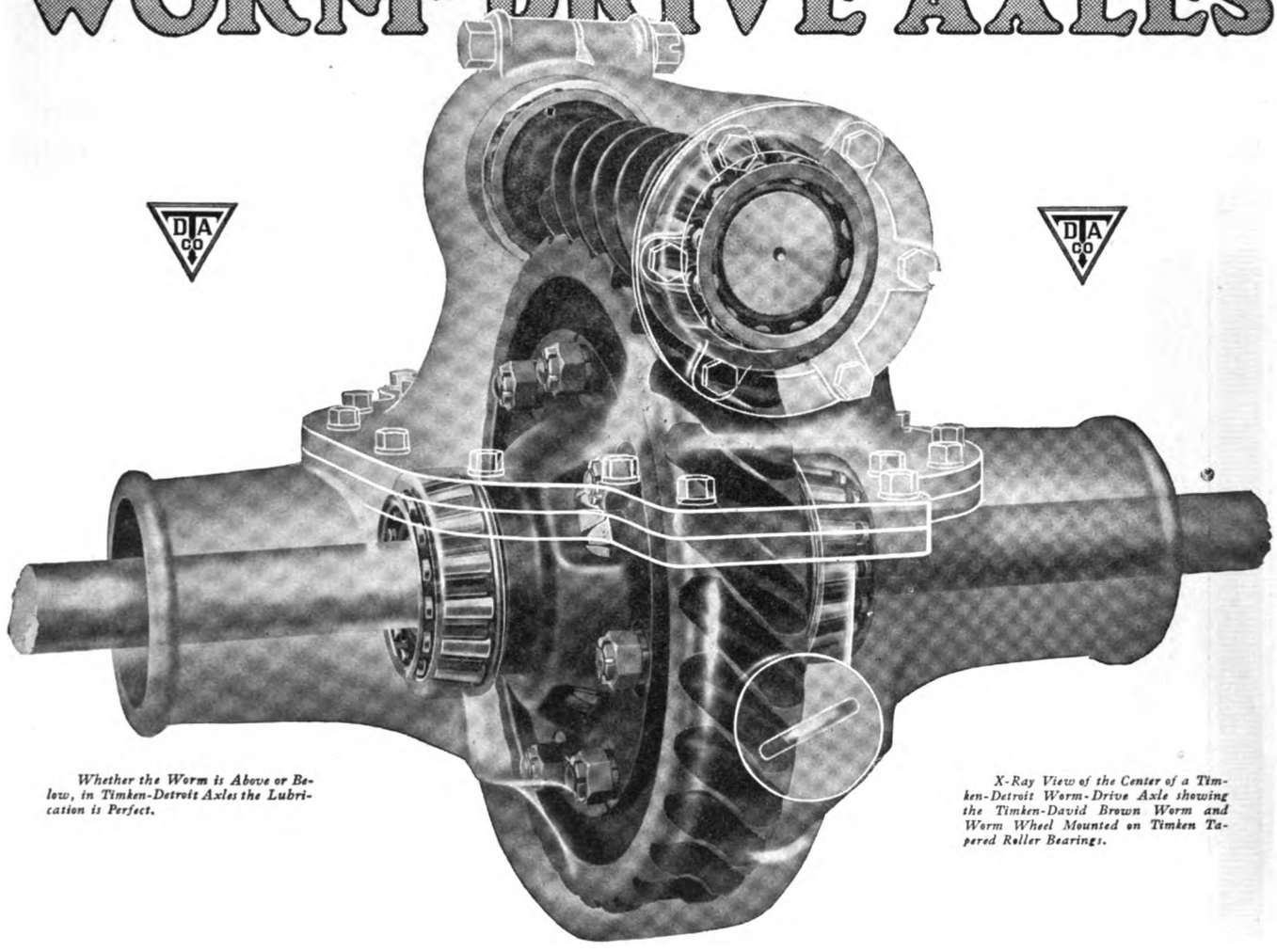
THE FISK RUBBER COMPANY

Factory and Home Office **Chicopee Falls, Mass.**

Fisk Branches in 43 Principal Cities

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TIMKEN-DETROIT WORM-DRIVE AXLES



Whether the Worm is Above or Below, in Timken-Detroit Axles the Lubrication is Perfect.

X-Ray View of the Center of a Timken-Detroit Worm-Drive Axle showing the Timken-David Brown Worm and Worm Wheel Mounted on Timken Tapered Roller Bearings.

Proved Right In Service

Worm drive is highly efficient. Retains full efficiency as long as it lives. Lives as long as any other form of drive—or longer. And grows better with age.

Worm drive is quiet—dead quiet—and stays quiet through life. It is the simplest drive, the cheapest to operate, the least expensive to keep in repair.

These things have been proved by the stock cars and the test cars of the great majority of commercial car builders. Proved in tests and in actual service.

A large proportion of worm-drive commercial cars are equipped with David Brown or Timken-David Brown Worms. A great many with Timken Tapered Roller Bearings or with Timken-Detroit Axles that contain both Timken-David Brown Worms and Timken Tapered Roller Bearings.

Although Timken-Detroit Worm Drive Axles have been in all kinds of severe service in all parts of the land during the past twelve months and more—

Not a single case of failure of any part in all this service has been reported to us.

We know of several David Brown Worms that have run over 60,000 miles and are just as silent and efficient as when first installed.

This is due to right design, to right materials in worm and wheel, to special machines that do extremely accurate work and to a final grinding that is possible only with the David Brown type of worm.

Timken-Detroit Worm-Drive Axles are made in several sizes for various horse-powers and for weights up to 11,000 lbs. on rear tires; that is, up to three or four ton capacity depending on the distribution of weight.

Engineers who are designing worm-drive commercial cars should write for blue prints and data to

The Timken-Detroit Axle Co.,
DETROIT, MICHIGAN

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From Now Until This Time Next Year

THE demand for Ford accessories is not governed by seasons. Ford owners run their cars the year 'round and it is this kind of usage which makes it worth while for you to cultivate the patronage of Ford owners. Especially if you handle practical Ford necessities.

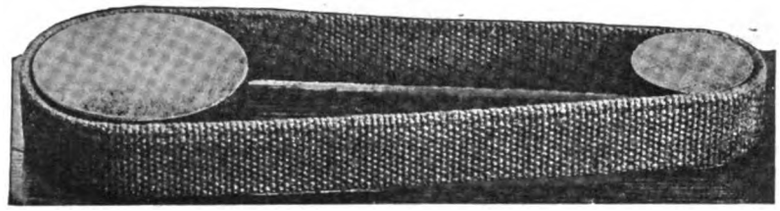


Gilmer Rebound Straps Set of 4 for Ford Cars, $4.00

There is just as much need and just as much demand for Gilmer Rebound Straps for use on Fords in the winter as in the summer. Gilmer Rebound Straps are so far superior in strength and wearing qualities, than the old style leather straps, that the demand for them is increasing every day. If you already handle them don't let your stock become decomplete. If you don't handle them you are missing one of the livest channels for ready sales and the easiest source of profit you can possibly add to your business.

Gilmer Rebound Straps make the Ford ride easier. The size recommended for Ford cars is strong enough to withstand the greatest shock the Ford car can possibly give them. You cannot recommend them too highly for Packard, Pierce-Arrow, Cadillac, etc., use them as a part of their standard equipment.

The retail price for Gilmer Rebound Straps for Ford cars is $2 per pair and $4 per set.



Gilmer Ford Fan Belt. Price, each 30c.

Another Gilmer product which will interest every Ford owner is a woven fan belt. Gilmer Ford Fan Belts are many times as efficient as the standard leather belt. First, because of their adaptability to the short-center pulleys of Ford cars. Next, they are woven very firmly and do not stretch or loosen up—nor does dust, oil or dampness affect them.

The price of a Gilmer Ford Fan Belt is 30 cents and while you cannot expect to get rich selling them the continual call for them makes your profit amount up considerably. The Gilmer Ford Fan Belt is one of the finest kind of articles to show whenever a customer's order indicates that he is a Ford owner and as a general thing with a few words you can add a fan belt to the purchase he intended to make originally.

Place your order for a sample lot of these fan belts today and don't let any of the Ford business get away from you, for it is just as good as any other and costs a whole lot less to get. Remember our discounts are liberal.

L. H. GILMER COMPANY

52 North 7th Street **Philadelphia, Pa.**

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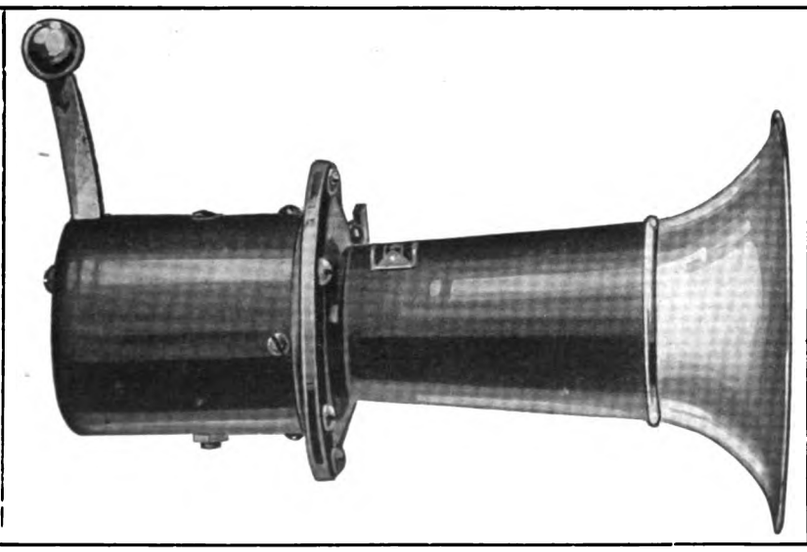
$9.50 to $15.00

SPARTON

Electric Motor Driven and Hand Operated Signal

The motorist cannot afford to depend on a good enough warning signal. When the time comes for action, he must have a horn that will compel quick, unthinking, instantaneous jumping—such is the discordant, action-compelling growl of the SPARTON when the button is pushed home. On country stretches a good pressure on the button produces a warning clarion that can be heard a mile down the road, giving everyone time to get out of the way. On city streets a light touch produces an inoffensive, but authoritative command, warning people at close range.

Hand Operated $7.00 and $8.00



Hand Operated $7.00 and $8.00

The Sparks-Withington Co., Jackson, Mich.

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Studebaker

STUDEBAKER dealers KNOW that Studebaker steels are made by America's best mills according to special Studebaker formulas.

They KNOW that the Studebaker heat-treating department, with 142 ovens, is the most scientific and most complete in the motor car industry.

They KNOW that Studebaker heat-treatments are the most exact and positive given.

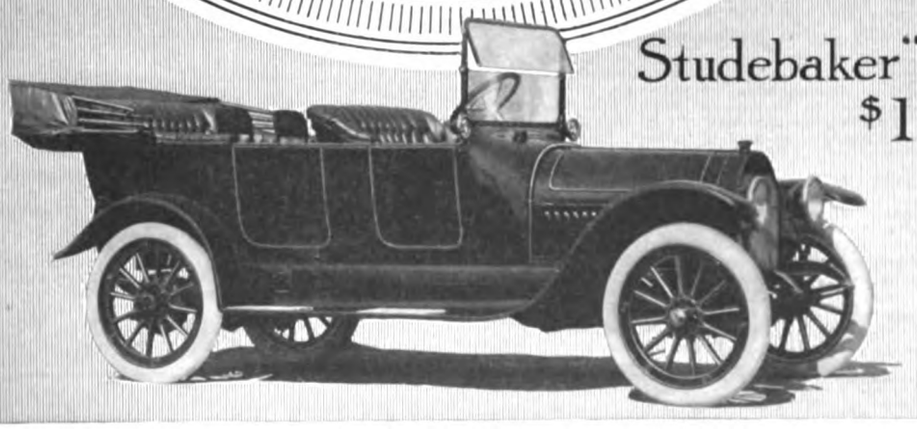
They KNOW that this same scrupulous precision is carried on through each of the processes involved in the making of Studebaker FOURS and Studebaker SIXES.

And because of this knowledge they are loyal to a man in backing up the Studebaker FOUR and the Studebaker SIX as the best value-giving and service-giving motor cars in the world.

Studebaker
Detroit

F. O. B. Detroit

FOUR Touring Car . .	$1050	*SIX Touring Car* . .	$1575
FOUR Delivery Car . .	1150	*SIX Landau Roadster*	1800
SIX Sedan	$2250		

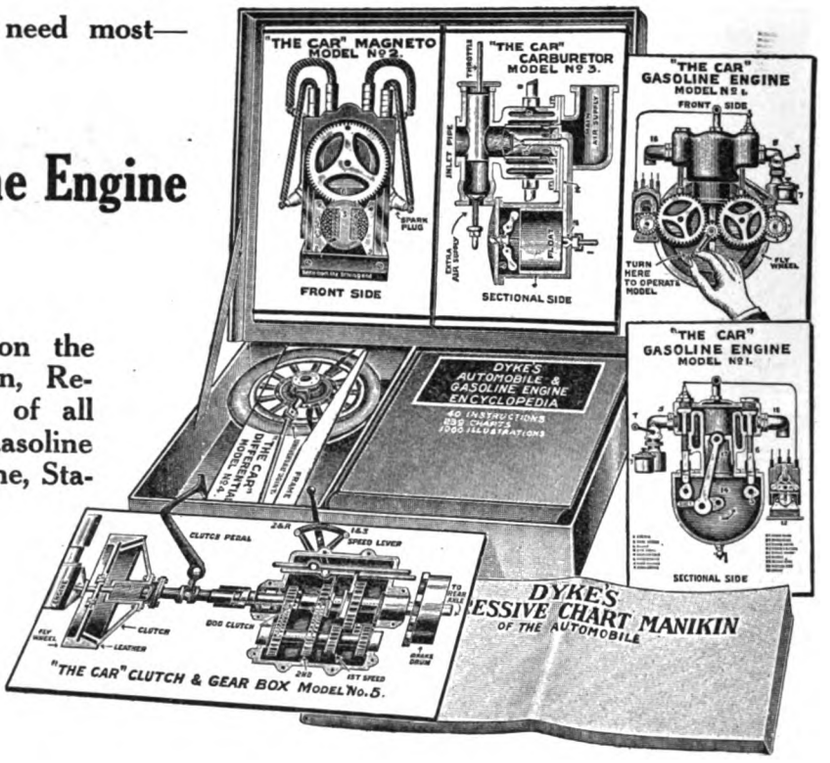


Studebaker "SIX"
$1575

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Here it is—just the thing you need most—

Dyke's Automobile & Gasoline Engine Instructor



A Practical Instructor treating on the Principle, Construction, Operation, Repairing, Troubles and Remedies of all Automobiles and all types of Gasoline Engines: Auto, Motorcycle, Marine, Stationary and Aero.

A NEW IDEA invented by A. L. Dyke, the originator of the first automobile supply business and publisher of the first practical book on automobiles in America. Endorsed by Lord Montagu, the leading motor authority of England, and Chas. Duryea, Chas. Splitdorf and others. Simple, Thorough, Practical. Prepared for the NOVICE, but a handy guide and reference for the EXPERT.

Dyke's Automobile & Gasoline Engine Instructor. Price $8.50

DESCRIPTION

ON THE WORKING MODELS YOU GET THE ACTUAL PRACTICE, see the actual INSIDE operation and learn the principle. The Instructions then explain and illustrate the variance in construction of the different parts in general use.

With these Models you learn more than you could from the real part itself because you see the inside operation—something impossible with the real part.

THE MODELS OPERATE BY HAND, ALL MOVING PARTS MADE OF REAL METAL. There are two sides to three of the models.

ON THE No. 1 ENGINE MODEL you learn the principle, then valve operation and how to set the valves. The same applies to all other models.

THE PROGRESSIVE CHART MANIKIN EXPLAINS WITH LARGE PROGRESSIVE DRAWINGS HOW THE AUTOMOBILE IS BUILT FROM THE GROUND UP; First the springs are mounted on the axles, then the frame on the springs, then the power plant on the frame, then the transmission and drive system, and so on until the car is completed. Key numbers of parts are referred to throughout the instructions.

THE ENCYCLOPEDIA contains 560 pages, 239 Charts and over 1000 Illustrations. It is divided into forty instructions, as follows:

> Assembly of the Car, Drives, Steering Springs & Brakes, Axles & Differentials, Clutches, Transmission or Change Gears, The Gasoline Engine, Engine Parts, Valve Timing, How Cylinders Fire, Two Cycle, Carburetion, Self Starters, Electric Ignition, Low Tension Coil, High Tension Coil, Wiring, Ignition, Timing, Various Ignition Systems, Low Tension Magneto, High Tension Magneto, Magneto Principle, Magneto Wiring, Magnetos Setting & Troubles, Storage Batteries, Lighting a Car, Cooling, Lubrication, Operating a Car, Rules of the Road, Care of the Car, Tires, Vulcanizing, Building a Garage & Repair Shop, Equipment, Tools, Use of Tools, Repairs & Adjustments, Digest of Troubles, Diagnosis & Remedies, Insurance, Laws, Horsepower, Tables, Measurements, Steam Car, Air Crafts, Pointers for Automobile Salesmen, Dictionary, Index.

EACH AND EVERY SUBJECT IS COVERED IN DETAIL WITH CLEAR ILLUSTRATIONS AND SIMPLE EXPLANATIONS—for instance: The Engine Subject covers all engines from 1 to 8 cylinder, explains the different valve systems and cylinders and crank shafts.

THE CARBURETION SUBJECT covers, first the principle of Carburetion, then the different constructions, and finally ends with clear detail rules for adjusting all leading carburetors.

THE ADJUSTMENT AND REPAIR INSTRUCTION is probably the most interesting. The subject of repairing begins with cleaning a car; cleaning carbon, chemically and mechanically; grinding valves; testing compression; taking up lost motion in valve stems and plungers; setting valves and timing the ignition; how to set all leading magnetos; scraping bearings; how to test for knocks and how to locate them; meshing the timing gears; fitting piston rings; carburetor repairs and adjustments; rewiring a car; ignition troubles and remedies; timer troubles and remedies; cooling troubles—how to clean and repair radiators; how to take up wear in differential; how to adjust the steering device; how to treat the clutch; lining up wheels, etc. In fact, every adjustment needed on a car is explained and fully illustrated.

THE INSTRUCTION ON SALESMANSHIP gives many pointers to the auto salesman in the way of advantages and disadvantages of different systems of ignition, carburetion, engines, etc.

THE INDEX AND THE DIGEST OF TROUBLES—With this Index the reader can find any trouble the auto is heir to, then turn to the Digest of Troubles and learn the cause and remedy, and then turn to the Repair Section and see how to repair it, or turn to the instruction and learn the principle and construction.

VALUE OF THIS INSTRUCTOR TO YOU. It will train you to become:

> (1) AN ENGINE EXPERT capable of diagnosing ignition, carburetion, valve timing, cooling troubles, and remedying them.
> (2) A DIAGNOSIST—who from knowing the principle and construction of all these subjects can instantly tell the cause of any trouble and apply the remedy.
> (3) A RUNNING GEAR EXPERT capable of diagnosing and remedying such troubles as differential, transmission, axles, brakes, steering wheels and axle troubles.
> (4) AN AUTO MECHANICIAN who can adjust and remedy all the troubles after diagnosing—the subject of repairing in this Instructor is complete in every respect.

YOU CAN'T AFFORD TO BE WITHOUT DYKE'S AUTOMOBILE AND GASOLINE INSTRUCTOR.

THE INSTRUCTOR CONSISTS OF:

> 5 Working Models
> Progressive Chart Manikin
> Book—Dyke's Automobile and Gasoline Engine Encyclopedia.

PRICE of the Dyke Automobile and Gasoline Engine INSTRUCTOR, as shown above, complete in a special box—$8.50. (Add 60c. if wanted prepaid.)

NOTE:—The Book—Dyke's Automobile and Gasoline Engine ENCYCLOPEDIA can be purchased separately, if desired. Price —$3.00. (Add 25c. if wanted prepaid.)

NOTE:—THE 5 WORKING MODELS can be purchased separately from the Instructor, but in sets of 5 only. Price for the five—$5.75. (Add 48c. if wanted prepaid.)

BOOK DEPARTMENT **MOTOR WORLD** **231 West 39th St. NEW YORK CITY**

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New Departure Ball Bearings



A Fair Question Deserves a Fair Reply

In designing your next car, the question of bearing equipment will, of course, receive the serious consideration so important a question deserves.

In all fairness, New Departure ball bearings more than answer that question.

It is a bearing of guaranteed quality including high grade materials, accuracy of finish, and uniformity of dimension. It is the product of an American factory with ample capacity for prompt and complete deliveries without liability of troublesome delays such as are sometimes experienced by manufacturers who buy their bearings abroad.

Why not give New Departures a thorough tryout?

A line from you will bring our literature and representative. May we send either or both and inform you fully of our proposition?

The New Departure Manufacturing Co., Bristol, Conn.

Western Branch, 1016-17 Ford Building, Detroit, Mich.

THE OVERMAN *Cushion Tread Pneumatic* TIRE

by its new method of construction offers a practical solution of tire problems



Durable

We guarantee the Overman Tire for 5,000 miles. If any Overman Tire fails to give that mileage we will make the purchaser an allowance for the difference, charging for mileage on a basis of five thousand miles, said allowance to apply against future purchases. The tire is **better than our guarantee,** and with proper care will give greater mileage.

Reliable

While not absolutely puncture-proof, punctures with the Overman Tires are very **rare** occurrences. This fundamental and disagreeable weakness of all pneumatic tires has been almost eliminated. **Blow-outs and rim-cuts are practically unknown.**

Dealers

who want to handle a tire built to give service and not to be cheap, should send for our proposition

Permanently Non-skid

OVERMAN TIRE COMPANY

1853 BROADWAY (at 61st Street) NEW YORK

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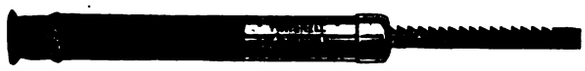
Look to your Tires

YOU can take a *thousand miles of service* out of a set of tires by driving them insufficiently inflated over *ten miles of road.*

The New Positive Lock Stop Twitchell Air Gauge

Insures you against premature wearing out of tires.

It is TIRE INSURANCE FOR ONE DOLLAR



For Sale by Jobbers, Dealers, Garages or

The Twitchell Gauge Company
1202 Michigan Avenue CHICAGO

What the Moore Multiple Exhaust System means to You.

By this system, exclusively our own, you gain 22.8 per cent more power with the same amount of fuel. Great economy and more power when you want it. No back pressures in the exhaust manifold. The clean incoming gas is undiluted.

THE LEXINGTON-HOWARD COMPANY
126 Main Street, Connersville, Ind., U. S. A.

"THE TUGBOAT OF LAND COMMERCE"



KNOX MOTORS CO., Springfield, Mass.



"WHITNEY" KEYS FOR FORD CARS

In order to supply the demand for "Whitney" Keys for Ford cars we are now prepared to furnish a box containing 12 keys especially assorted for these cars.

Each box contains a circular describing each key, giving size and where used. Every garage and repairman should have a box of these keys on hand. They cost little and are very convenient.

THE WHITNEY MFG. CO.
HARTFORD, CONN.

New and Rebuilt Electrics at Low Prices

We have on hand 150 new and rebuilt chain- and shaft-driven electric vehicles, which we will sacrifice at prices that will enable you to reap very large profits. The new cars are perfect in every particular; the rebuilt cars are all in first-class condition, richly finished and completely overhauled — new tires and new batteries. All cars guaranteed for one year. WRITE TODAY for prices and illustrations.

Buffalo Electric Vehicle Company
Main Street, Buffalo, N. Y.

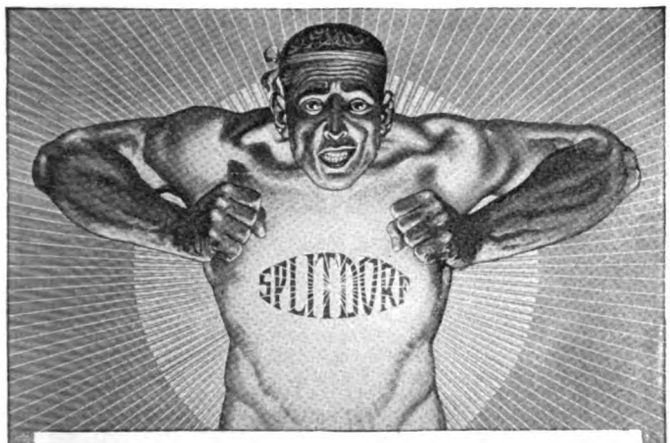
Booth FELT

TRADE MARK

Washers, Gaskets, Packings and automobile felt goods are made in a factory specially equipped for automobile requirements.

N. E. BOOTH, 642, 644 Pacific Street, Brooklyn, N. Y.

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SPLITDORF PLUGS are the standard of PLUGDOM.

All sizes—for all cylinders—for all purposes.

Insist upon SPLITDORF—it's necessary.

SPLITDORF ELECTRICAL COMPANY

ATLANTA	10-12 E. Harris St.	LOS ANGELES	1215 S. Hope St.
BOSTON,	St Germain & Mass. Ave.	MINNEAPOLIS	34 S. 8th St.
CHICAGO	64-72 E. 14th St.	NEWARK	290 Halsey St.
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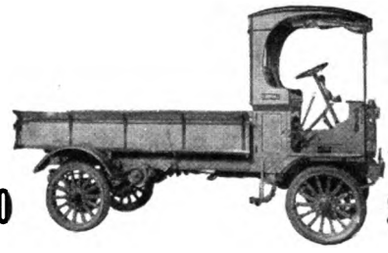
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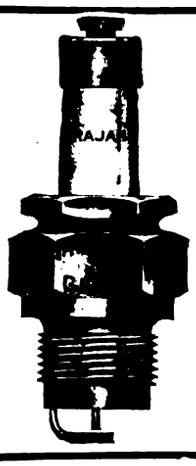
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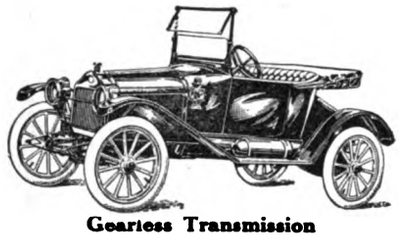
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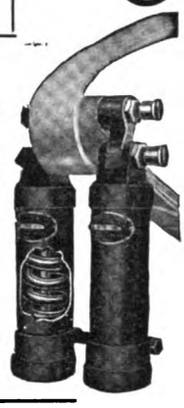
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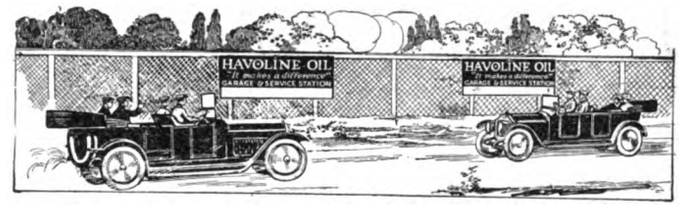
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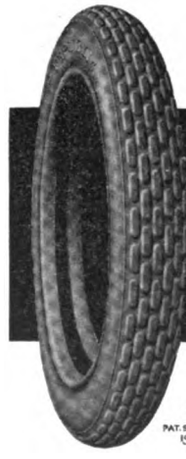
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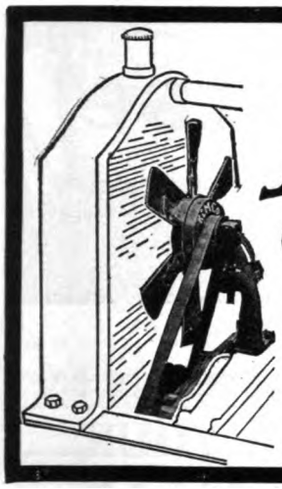
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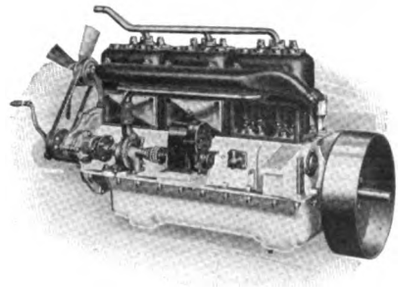
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To handle as side line on commission a full line of highest grade repair parts for magnetos and coils. Every dealer and jobber has use for these parts. Answer, Box 290, care of Motor World, giving territory covered.

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Will not come off by washing, nor will it soil light clothes. Dries in twenty minutes. Makes old cushions like new. Buy it from your garage, dealer, jobber.

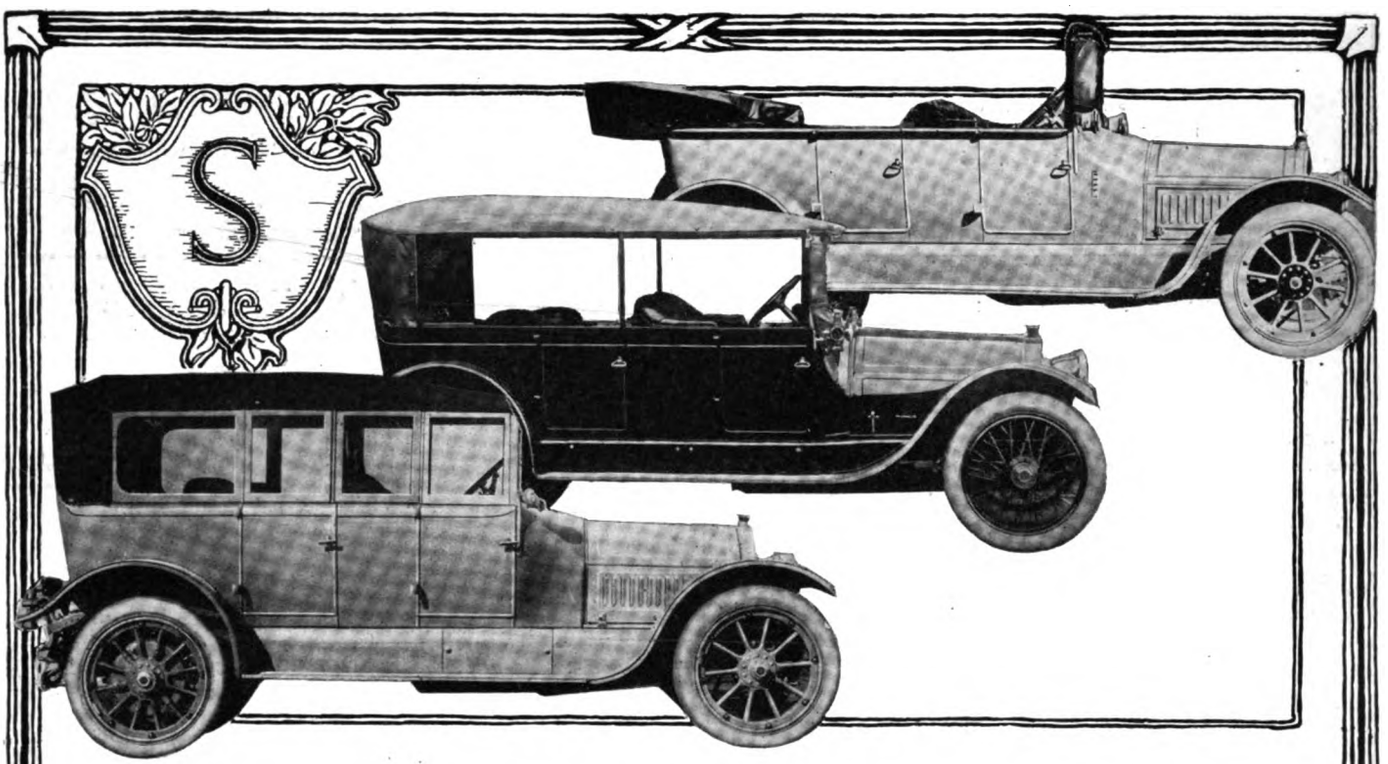
THE COLUMBUS VARNISH CO., Columbus, Ohio

SUPERINTENDENT WANTED — For a growing manufacturing company. Three years old, output has doubled each year, now employ 100 men and are six months behind on orders; expect to employ 500 men in three more years. We want a young and live production man who has already made good. Must have had the most modern metal manufacturing experience. Prefer one versed in automobile practice and one now employed. Only a man of the highest class who can command an adequate salary need apply. This is the chance of a lifetime for the right kind of a man. Send fullest particulars first letter. Everything treated confidential. Box 288, care Motor World.

SALESMAN and Automobile Expert, age 30 years, operating auto. supply store, wishes additional work selling mechanical goods for large house, southeastern territory. Address WORK, Box 286, care Motor World.



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SPRINGFIELD
Convertible Bodies

are the logical solution of the problem confronting 99% of your customers—how to have a car which can be used in all kinds of weather.

Not over one per cent of the motorists can afford both an open and a closed car. Therefore, it would be good judgment on your part to order one of your chassis equipped with a Springfield Convertible Body to show and demonstrate to 99% of your customers—good judgment because:

1st. It meets the requirements of the greatest number.

2nd. There is an added profit for you on each sale.

Particulars on Request

Springfield Metal Body Company
Springfield, Mass.

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"Satisfaction First"

from C. S. Burriss, Esq., 517 Euclid Avenue, Kansas City

"I have one of your Klaxon horns. It was on my car when I was in a wreck with a Burlington train.

"The horn was completely mashed with the exception of the noise. It still sounds and I think can be used if I put a new projector on."

Later:

"I want to write you and try to express how grateful I am for your kindness in repairing my Klaxon.

"I certainly did not expect you to repair it free of charge for it was no fault of yours that it was completely mashed in a wreck with a railroad train.

"It came back all O. K. and I am using it on my new car now. Once a person uses a Klaxon they cannot get along without it."

The Klaxon guarantee covers everything that can possibly happen to a signal. There are no exceptions. There is no limit as to time. It insures the perfect operation of every Klaxon—PERMANENTLY.

LOVELL-McCONNELL MFG·COMPANY
MAKERS OF THE "KLAXON"·NEWARK·N·J·

This advertisement planned, written and set up entirely in the Klaxon Factory. Type composition by the Klaxon Press with "Klaxon" type especially designed by Goudy.

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Storm Proof

It is not enough that automobile top fabrics withstand tests to determine whether or not they are waterproof. Making a fabric waterproof is simple enough but the real problem, the problem that never has been solved until the introduction of Laidlaw-Burbank — is to make a fabric that will remain stormproof under the conditions of service automobile usage presents.

It is a safe prediction to make—and this you can bank on—that no fabric which employs rubber or artificial leather compounds or compositions ever will be able to stand the wear or strain required of a serviceable top material.

Laidlaw-Burbank is radically different from other top materials in that no rubber or other compounds are used in its making—yet it is absolutely waterproof. It is waterproof because of the way it is woven and therefore does not depend upon perishable compounds to repel water. That is why it stays waterproof indefinitely. Frequent folding does no harm as there is nothing to break or crack.

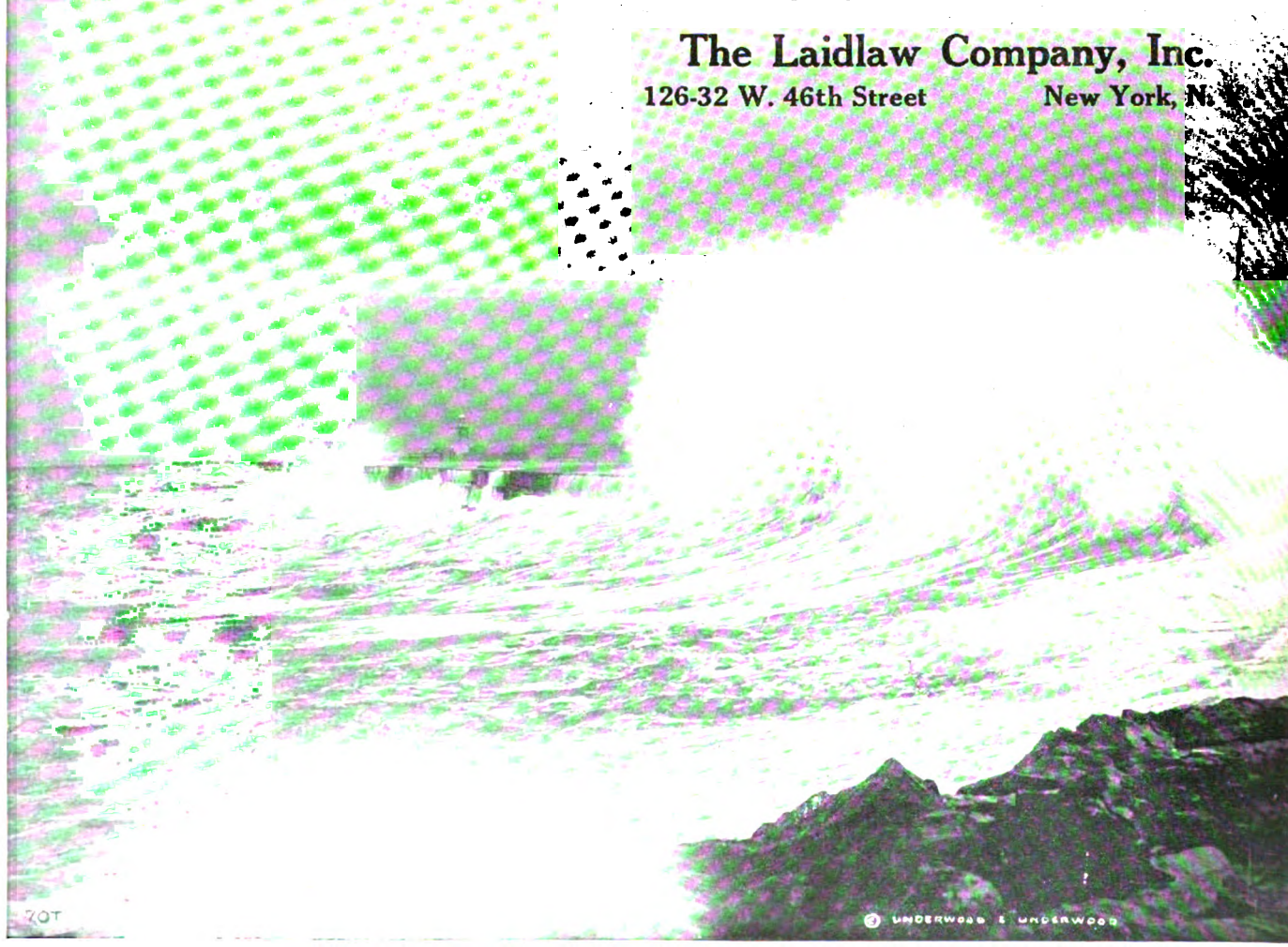
This is the experience of automobile manufacturers, body builders and top makers here and abroad.

Would it interest you to know more about Laidlaw-Burbank Motor Cloths? Our next announcement will describe the quality for seat covers.

Laidlaw BURBANK MOTOR CLOTH

The Laidlaw Company, Inc.

126-32 W. 46th Street New York, N.



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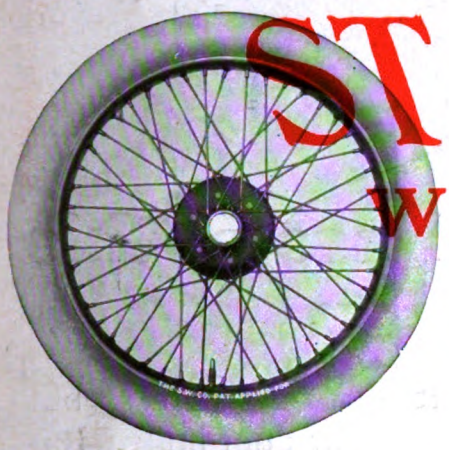
MOTOR WORLD

A Trade Paper Giving the World's Motor News

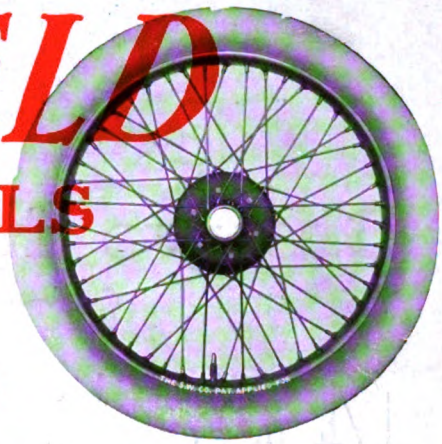
Volume XL
No. 5

New York, July 29, 1914

Ten cents a copy
Two dollars a year



STANWELD
WIRE WHEELS
for
FORDS



HERE are the facts. Stanweld Wire Wheels weigh nine pounds less per set than wooden wheels. This saving in unsprung-weight is equivalent to approximately sixty-five pounds above the axles.

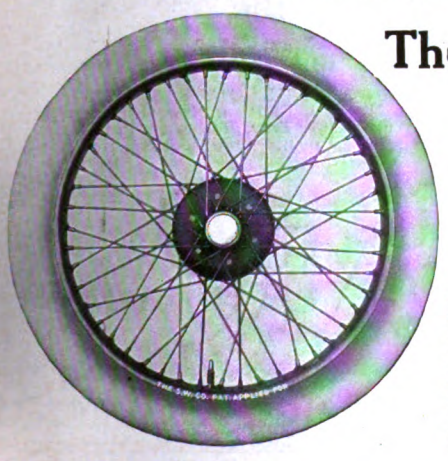
The difference is sufficient to make an appreciable saving in tire, oil, and gasoline expense.

Also, you can equip your car with 30x3½ Stanweld Wire Wheels all around, thereby saving the cost of that extra 30x3 tire.

Again, Stanweld Wire Wheels are stronger than wooden wheels. They are more resilient. They prevent over-heating of tires. They cost only $20 per set of four, ready to attach, and can be applied by the car-owner.

If a dealer with these facts at his command cannot sell Stanweld Wire Wheels, there is no accessory that he can sell.

Write today for literature, discounts and order a sample set

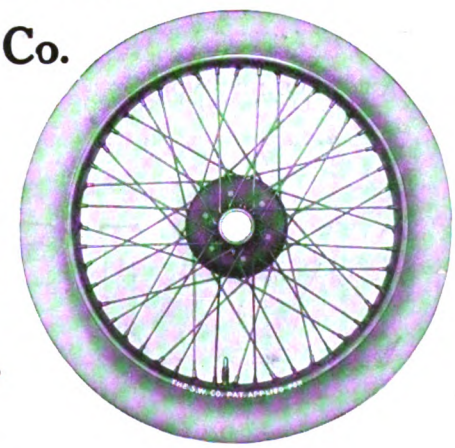


The Standard Welding Co.

Pioneers and World's Largest Producers of Rims for Motor-Driven Vehicles

Main Office and Factory

CLEVELAND

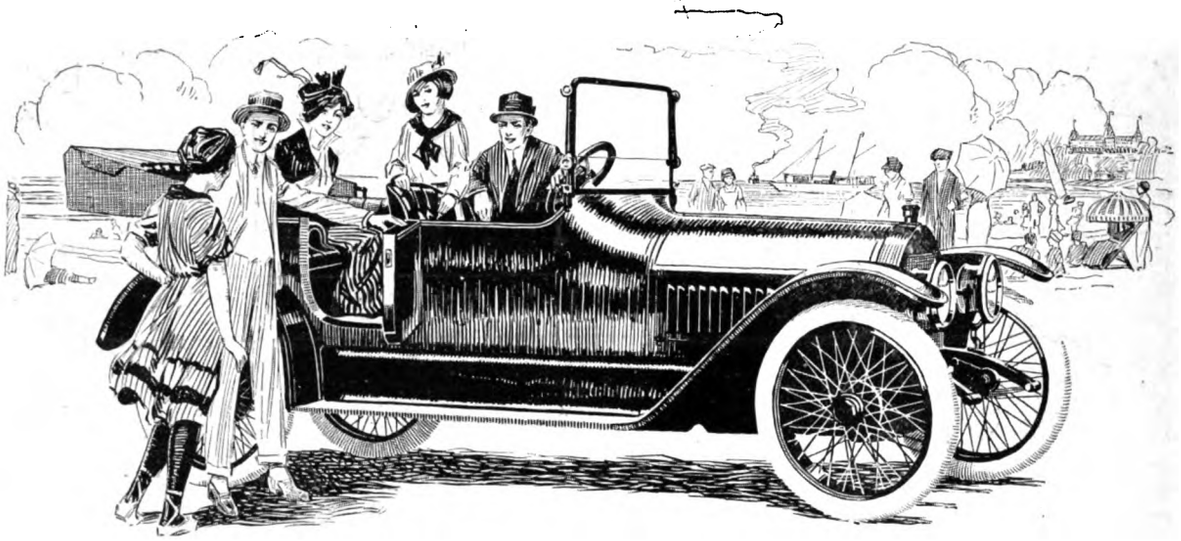


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Des Moines	Omaha	Washington

Published Weekly by the Motor World Publishing Company, 231-241 West 39th St., New York

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Observe the yacht-like lines of this two-door KisselKar

MUCH has been said by car builders about yacht-like lines, but they really never existed—or could exist—with a four-door body. But here they are—sweeping, graceful, unbroken from the bow of the bonnet to "midship."

The KisselKar two door body is a greater advance in construction than was the four-door body over the old "open front."

The introduction of the four-door body accomplished but one thing—it improved the looks of the car.

The KisselKar Two-Door again beautifies the car and at the same time adds infinitely to its comfort and convenience.

Look at those big 26-inch doors and the aisle between the front seats—consider how these features add to the pleasure of motoring. Ample room to get in and out and provision for passing from the rear to the front seats without leaving the car.

The new 48 "Six" chassis, on which this two-door tonneau is mounted, is mechanically the best KisselKar ever built.

Four-door body on this chassis is optional—you can buy either type for $2350. Wire wheels $70 more.

Dealers— **This is the car that will land the sales for you – wire or write for full particulars**

KISSEL MOTOR CAR CO., 159 Kissel Ave., Hartford, Wisconsin, U.S.A.

BOSTON, NEW YORK, CHICAGO, MILWAUKEE, KANSAS CITY, MINNEAPOLIS, ST. PAUL, DALLAS, LOS ANGELES, SAN FRANCISCO, OAKLAND, Philadelphia, Salt Lake City, Detroit, St. Louis, Houston, El Paso, New Orleans, Baltimore, Nashville, Duluth, Buffalo, Pittsburgh, Omaha, Seattle, Hartford, Conn.; New Haven, Albany, Troy, Rochester, Providence, Marshalltown, Ia.; Hastings, Neb.; Madison, Montreal, Quebec, Calgary, and 300 other principal points throughout America

KISSELKAR

Every Inch a Car

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R·I·V

Ball Bearings



QUALITY

What R. I. V. Mean to a Motor Car

UPON the efficiency of the bearings depends the satisfactory and economical operation of a motor car—gasoline or electric.

Hence, manufacturers as well as purchasers of high grade motor cars demand Ball Bearings of proven efficiency.

R. I. V. Ball Bearings are today the equipment of practically every high class car, because their structural advantages are as valuable as they are ***exclusive.***

R. I. V. Retainer originated by R. I. V. Engineers years ago is now being adopted as a ***new feature*** by many makers.

R. I. V. COMPANY

S. W. Cor. 57th Street and Broadway New York

IMPORTED SINCE 1904

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In a "centrifugal mile" there are exactly 5280 feet. In a "magnetic mile" there are 5280 feet more or less according to the temperature, altitude, or proximity of electrical influences.

The centrifugal principle plays no tricks with time or space. When the steady, non-jarrable indicator of the centrifugal

CORBIN-BROWN SPEEDOMETER

"The Speedometer of Absolute Accuracy"

points to the miles on a legible, stationary dial, it points to the absolute FACT. Atmospheric conditions or electrical influence does not effect its accuracy in the slightest.

The Corbin-Brown construction is as sound as its principle. Its simple, strong, friction-free parts give double the life of the complicated magnetic mechanism and stand up under the severest strain.

A thorough investigation of the centrifugal Corbin-Brown will convince you that there is no stronger or more durable instrument made. Visit a Corbin-Brown dealer today. A guarantee of a full year's service covers every speedometer.

Catalogue on request

THE CORBIN-SCREW CORPORATION

THE AMERICAN HARDWARE CORPORATION, Successors

NEW BRITAIN, CONN.

BRANCHES: **New York** **Chicago** **Philadelphia**

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We're making automobile tires, not promises. You know as well as we do that some day any tire will wear out. But to put that day off as far as possible we're making Kelly-Springfield Tubes and Tires of real rubber, by hand.



Kelly-Springfield Tire Company

Corner Broadway and 57th Street, New York

Branch offices in New York, Chicago, Philadelphia, Boston, St. Louis, Detroit, Cincinnati, San Francisco, Los Angeles, Cleveland, Seattle, Atlanta, Akron, O.

The Hearn Tire & Rubber Co., Columbus, O.
Bering Tire & Rubber Co., Houston, Texas
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Atkinson Tire & Supply Co., Jacksonville, Fla.
Central Rubber & Supply Co., Indianapolis, Ind.
C. D. Franke & Co., Charleston, S. C.
K. & S. Auto Tire Co., Limited, Toronto, Can.
Todd Rubber Co., New Haven, Conn.
Barnard & Michael, Buffalo, N. Y.

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Complete With Electric Starter

BRIEF SPECIFICATIONS: Electric head, side, tail and dash lights; 35-horsepower motor; 114-inch wheelbase; Mohair top, curtains and boot; High-grade speedometer; Clear-vision, rain-vision, windshield; Electric horn

THERE does not exist another automobile manufacturer who can build a car according to Overland specifications and market it at the Overland price *without losing money.*

That is why *all other cars* of a similar description and corresponding specifications *have* to be sold at considerably more money.

Catalogue on request. Please address Dept. 50

The Willys-Overland Company, Toledo, Ohio

Manufacturers of the famous Overland Delivery Wagons, Garford and Willys Utility Trucks. Full information on request.

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MOTOR WORLD

Vol. XL New York, U. S. A., Wednesday, July 29, 1914 No. 5

HUPMOBILE DEALERS MEET IN FACTORY CONVENTION

Trade Problems to Be Discussed in Sessions July 31-August 1—Two Hundred Dealers Are Expected.

The second annual Hupmobile convention will take place at the plant of the Hupp Motor Car Co., Detroit, July 30 to August 1. About 200 dealers are expected from this country and abroad.

The program is as follows: July 30—Registration of dealers and informal reception by President J. W. Drake. In the afternoon the dealers will be given a boat ride and supper at Bob-Lo.

July 31, morning session—Talk on "The Memium-priced Car Dealer Has a Staple Product," by F. J. Money, sales and advertising manager; "International Selling Methods," by C. H. Dunlap, general export manager; "Territorial Organizations," by A. C. Robbins, Los Angeles distributer; "Spirit of Service," by F. G. Fox; "Direct Mail Advertising," by Palmer E. Winslow, advertising department; "Newspaper Advertising," by M. G. Ward, of the Dunlap-Ward Advertising Co.; "Hupmobile Advertising Plans for 1915," by J. G. Reo, Hupp Motor Car Co. advertising department.

Afternoon session—"The New Hupmobile Construction," by F. E. Watts, chief engineer; "Chassis and Electric Construction," by Don T. Hastings, assistant chief engineer. A detailed description will be given of the new car and disassembled and assembled parts, etc., shown during the course of this lecture. Evening—Theater party in the Temple.

August 1—"Hupmobile Plant Organization and Factory Capacity," by S. H. Humphrey, manufacturing manager. Trip through the plant under Mr. Humphrey's direction. Further discussion of new models and display of new cars in factory salesrooms. Evening—Banquet at Hotel Ponchartrain.

Jeffery Dealers Convene Next Week.

Five hundred dealers representing all sections of the country will be in attendance at the Jeffery "Chesterfield" convention to be held at Kenosha, Wis., August 4 and 5, at the factory of the Thomas B. Jeffery Co. The announcement of the Jeffery Chesterfield six will undoubtedly result in many changes in Jeffery representation in many sections of the country with new additions to the organization. Two days will be given to the assignment of territory to visiting dealers, the exhibition of the new cars and demonstration of the Jeffery Quad, the truck of Jeffery manufacture which has been adopted by the United States Government.

Briggs-Detroiter Holding Convention.

The annual convention of dealers handling the Briggs-Detroiter is being held this week under a big tent specially set up for that purpose on the factory grounds of the Briggs-Detroiter Co., Detroit. "We could not take care of such a large gathering in our offices," said one of the officials of the company. "Anyhow, this warm weather the men rather like the idea of being outdors."

New Distributor Opens in Sioux City.

F. H. Clark, who has been factory representative for the Willys-Overland Co. in the Northwest, and R. W. Schutt, who has held a similar position for the same company in southern Iowa, have joined forces and will open a distributing agency for Overland cars and Willys commercial vehicles in Sioux Sity, Ia. Their territory will include Northwestern Iowa, Northeastern Nebraska and Southeastern South Dakota. The headquarters of the concern, which will be styled Overland Sioux City Co., will be at 726 Pearl street, Sioux City, Ia.

BOSTON DEALERS BETTER BY 20% THAN LAST YEAR

New England Hard Hit Financially But Trade Looks Upward and Sales Increase in Spite of Money Drawbacks.

The 1914 season for the dealers in Boston has been very satisfactory. The men who handle cars that have been on the market for some years and whose merits are known through users and whose names are kept before the public eye through advertising have had sales enough to insure them a good business year. Conservatively stated, sales are 20 per cent better than in the same period a year ago.

It must be remembered that New England was harder hit than the rest of the country, through the great slump of the Boston & Maine and New York, New Haven & Hartford railroad stocks, which in some cases wiped out the entire income of many families and scaled down the value of many estates. This could not help but reflect upon general business conditions, especially the motor world. Also changes from branches to agencies, and the shifting of agencies to new hands held some cars back.

However, when one compares the registration figures at this time with a year ago, which is about the beginning of a new season, it shows that more than 11,000 cars are listed. As about 70 per cent are marketed in Greater Boston, and allowing for the registering of duplications, it is safe to put the sales at about 7,500, with a few weeks yet to go.

The dealers are ready to give some idea of a percentage increase, but they do not like to quote actual sales. But in looking over registrations it is found that big and little cars have been selling well, for among the list comprising the 25 or

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30 leaders in total registrations one finds the well known names.

The Overland dealers, Connell & McCone, said that last year they sold 471 cars and this year 781, an increase of 310, or 65 per cent., with a couple of weeks to go. Manager J. H. Johnson, of the Buick company, jumped from 600 last season to 800 this season, and now he has put in an order for 1,000 cars for 1915. He was all cleaned out a month ago,and his sales force has been on a vacation ever since.

The Cadillac agency was reorganized, and A. S. Danforth, the new head of the company, says the sales have shown a steady gain that compared favorably with preceding years.

The Henley-Kimball Co is handling the Hudson for its second season, and marketed 75 more cars than the first season, and showed a gain of 50 per cent. But they could have sold at least 100 more cars, Henley stated, had they been able to get them.

Joseph S. Donovan said that he sold 20 per cent more Studebakers and then he was handicapped because he did not get his cars until very late, his season not beginning until October. He said that if he were able to get the cars in July and August he would have done at least 10 per cent more business.

The Hupmobile changed agencies last year, and up to date more than 200 cars have been marketed in this section. While it was not possible to get the figures of the other dealer, the Wentworth-Fosdick Co., now handling the line, states that it must be an increase judging from factory reports.

J. H. MacAlman says that he has sold 25 per cent more cars this year, due no doubt to the Stearns company adopting the Knight motor. He said at first that it was not an easy matter to convince people, but after a few cars got into the hands of owners he had easy going.

F. E. Wing says that his business with the Marmon shows an increase, though not a very large one. This is due to the fact that he had the new medium six to introduce, as well as the four and the big six. He was handicapped by lack of aggressive salesmen, he stated, and it took much work to place all three cars advantageously. But the light six has been a big seller and next season he expects to do a big business.

J. W. Maguire did 20 per cent more business over the previous year with the Pierce-Arrow. He says that he has started his 1915 season with an increase showing 25 per cent and he expects to maintain that right along.

(Continued on page 36.)

COOPERATION SECRET OF SUCCESS OF ASSOCIATION

"Don't Boost Self; Help Your Brother," Advises Speaker at Illinois Garage Association Meeting.

Cooperation, not self advancement, should be the object of garage associations, according to President Robert Bland, Chicago, in his address before the convention of the Garage Owners' Association of Illinois, held last week in Decatur. One hundred garagemen attended.

In planning the campaign for the enlargement of the association, he recommended that each local organization perform some missionary work among the small garages in their vicinity in order that all may become interested in the state body. In making a plea for legislation of a greater protective character, he said that the automobile industry had grown faster than anything that the world had ever seen before. It has grown so fast that there are many departments of the industry in which neither the garage man, the mechanic, nor the motorist was protected properly by law. He then explained the text of the new lien bill which is to be presented to the legislature and in which the garage owner is given the same protection which is extended to the workingman who builds a house.

J. W. Waring, a member of the Bankers' Alliance, made a talk on the aims and objects of the Motorists' Security Alliance, a corporation which is affiliated with the Burns International Detective Agency.

C. B. O'Hara, of Chicago, discussed the various qualities of gasolene on the market and furnished some interesting observations on prices and variations in grades. His paper was marked by a number of interesting statistics and other valuable information.

Sparta reported that the city and county had been completely organized, every garage owner being in line and that the result had been an agreement to establish uniform prices for gasolene and accessories, the combination ensuring better service for the public.

Similar reports were received from other counties of the state, indicating an encouraging growth in membership and usefulness of the association. It was announced by the committee in charge that a repair schedule is in preparation which will be recommended for state wide adoption and which will insure motorists uniform prices and first class work. Under this schedule, members of the association agree that only first class mechanics will be employed, thus guaranteeing patrons that they are receiving what they pay for.

William McGinley, president of the Decatur Automobile Club, delivered the address of welcome. He devoted considerable of his talk to the subject of good roads and tendered the association the cooperation of the Decatur club in any legislation that would work for the betterment of road conditions. Mr. McGinley was elected an honorary member of the association.

It was voted to hold the next meeting in Peoria; the date to be selected later by the president.

Bench Warrant for Standard Oil.

A bench warrant has been issued for the Standard Oil Co. of New Jersey upon complaint of the Crew-Levick Oil Co., one of the several companies which have been engaged in a gasolene war in New Jersey, forcing the price down as low as 9½ cents wholesale in certain towns. The complaint charges that the Standard company is unreasonably cutting prices in an effort to wipe out smaller competitors in violation of one of the "Seven Sisters" laws passed when Woodrow Wilson was governor of New Jersey. The warrant was issued by a court in Newark.

Gasolene is being sold today in New Jersey at 9½ cents a gallon wholesale by the Standard, Gulf, Texas Oil Co., Pure Oil Co. and the Crew-Levick company. The Texas company is the only concern which maintains retail distributing stations. At these depots gasolene is being retailed at 11½ cents a gallon, which last week was the wholesale price that prevailed in the trade thereabouts.

Most of the other concerns retail their product through garages, where the price is fixed by the garage proprietor. One of the largest paint and oil houses in Newark is retailing the Pure Oil Co.'s gasolene for 11 cents a gallon.

Cutting the wholesale prices has resulted in a drop in retail rates charged by most of the garages. Some of these places have been charging as much as 25 cents a gallon. Eighteen to 20 cents is the top price charged this week, with plenty of garages selling as low as 15 cents.

In New York city the price has dropped from 14 to 13 cents to garagemen. It was 17 cents not long ago.

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New Demonstrator Department

Dealers Who Have Received Demonstrating Models of the New 1915 Cars—Season Opening Well.

New demonstrating cars of 1915 model are being shipped by manufacturers and are eagerly awaited by dealers. Getting the new car in the eye of the prospect is one of the first effective strokes of the new season. Below are dealers who have the new cars running in their territory.

Cole Motor Car Co., Indianapolis, Ind., has shipped demonstrators during the last three weeks to:

Dealer.	Place.
Cole Motor Co.	Atlanta, Ga.
J. R. Norris	Raleigh, N. C.
Murray Garage Co.	Tarboro, N. C.
E. F. Dougherty	Jacksonville, Fla.
Butte Auto Co.	Butte, Mont.
Cole Motor Co. of Buffalo	Buffalo, N. Y.
Cole Motor Co.	Pittsburgh, Pa.
Thompson Garage Co.	Clarksburg, W. Va.
T. J. Underwood	Washington, Pa.
Globe Garage & Machine Co.	Cannonsburg, Pa.
Eleventh Avenue Garage	Altoona, Pa.
W. T. Sigler	Piedmont, W. Va.
W. H. Dulland & Co.	Clarion, Pa.
Commercial Motor Car Co.	Johnstown, Pa.
Cole Motor Co.	Erie, Pa.
Streator Garage	Streator, Ill.
W. H. McFarlin	Hoopestown, Ill.
Cole Motor Co.	Chicago, Ill.
Van Duyn & Mathis	Springfield, Ill.
Cole Motor Co.	Peoria, Ill.
Cole Motor Co.	Des Moines, Ia.
J. L. Wiess & Son	Champaign, Ill.
O. W. Walters	Bloomington, Ill.
Cole Motor Co.	Milwaukee, Wis.
S. L. Bradley	Princeton, Ill.
Fred E. Carlson	Rockford, Ill.
W. L. Shellabarger & Son	Decauter, Ill.
Cole Motor Co.	Oshkosh, Wis.
Fred E. Koch	Burlington, Ia.
Canberg Auto Co.	Eau Claire, Wis.
Geo. C. Miller Sons Carriage Co.	Cincinnati, O.
George Joffee	Cheyenne, Wyo.
Leo McDaniel	Cairo, Ill.
Richardson Motor Car Co.	Cleveland, O.
Dietrich Motor Car Co.	Youngstown, O.
Wedge Garage Co.	Zanesville, O.
Bunnell Auto Sales Co.	Toledo, O.
Cole Motor Co. of Dallas	Dallas, Tex.
Carroll Motor Co.	Carroll, Ia.
Siegel-Zeckendorf Co.	Detroit, Mich.
Grand Center Motor Car Co.	St. Joseph, Mo.
Adams & Son Gro. Co.	Chillicothe, Mo.
Cole Motor Co. of Missouri	Kansas City, Mo.
Cole Motor Co. of Missouri	St. Louis, Mo.
G. & A. J. Matthews	Malden, Mo.
Cole Motor Agency	Shreveport, La.
Northwest Auto Co.	Portland, Ore.
Browning Auto & Supply Co.	Salt Lake City, U.
Browning Auto & Supply Co.	Ogden, U.
Drummond Motor Car Co.	Omaha, Neb.
Fairchild Auto Co.	New Orleans, La.
Cole Motor Co.	Montgomery, Ala.
L. E. Quimet	Montreal, Que.
Northwestern Cole Motor Co.	Minneapolis, Minn.
R. L. Holcomb	Rapid City, S. D.
Standard Auto Co.	Louisville, Ky.
Cole Motor Co.	Los Angeles, Cal.
Graf Motor Car Co.	Hamilton, O.
Guarantee Motor Car Co.	San Antonio, Tex.
Morgan Auto Co.	Sioux City, Ia.
Cole-Spokane Motor Co.	Spokane, Wash.
Republic Motor Car Co.	Toronto, Ont.
Breen Motor Co.	Winnipeg, Man.
Cole Motor Sales Co.	Washington, D. C.
Geo. W. Creswell	Lancaster, Pa.
Colt-Stratton Co.	New York, N. Y.
Wallace Motor Car Co.	Newark, N. J.
The Auto Co. of Philadelphia	Philadelphia, Pa.
Kensley & Co.	Sydney, Australia
Cole Motor Co. of Boston	Boston, Mass.
The Portland Co.	Portland, Me.
Richardson Bros. Auto Co.	Naugatuck, Conn.
Bishop, McCormick & Bishop	Brooklyn, N. Y.
Lane Mfg. Co.	Montpelier, Vt.
The Auto Distributer Co.	Logansport, Ind.
Ft. Wayne Iron Store	Ft. Wayne, Ind.
Byron Hessler	Hillsboro, Ind.
L. M. McGee	Acton, Ind.
John E. Miller	Huntington, Ind.
C. F. Seward & Son	Kokomo, Ind.
M. L. Williams	South Bend, Ind.
Brasher Motor Co.	Columbus, O.
Cole Sales Co.	Dayton, O.
E. L. Ensign	Springfield, O.
C. E. Miller	Marion, O.
Thomas Motor Car Co.	Lima, O.
F. Dix Preston	Athens, O.
Oblong Auto Co.	Oblong, Ill.

King Motor Car Co., Detroit, has shipped demonstrators to:

Dealer.	Place.
Alliance Motor & Supply Co.	Alliance, O.
F. H. Bardshar	Seattle, Wash.
B. A. Burnett	E. Aurora, N. Y.
Joseph Hall	Brownwood, Texas
Heinrich Automobile Co.	St. Louis, Mo.
Julius Jordan	Aurelia, Ia.
Ross-Stone Co.	Chicago, Ill.
Salmons & Sons	London, England
Alexander Binney & Co.	Nashville, Tenn.
E. E. Wilkins	Duckhill, Miss.
Chas. E. Wakeman	Lestershire, N. Y.
Washington Garage Co.	Washington, Ill.

Chandler Motor Car Co., Cleveland, O., shipped demonstrators last week to:

Dealer	Place.	Model.
F. H. Jones, Muncie, Ind.		Touring
Henderson's Garage, Shreveport, La.		Touring
Buck Motor Car Co., Davenport, La.		Touring
Central Auto & Supply, Waterloo, Ia.		Touring
Chandler Motor Car Co., Boston, Mass.		Touring & Roadster
W. L. Huffman Auto Co., Omaha, Neb.		Touring & Roadster
Erie Penn Auto Co., Erie, Pa.		Touring
W. R. Shaw, Syracuse, N. Y.		Roadster
Wm. P. Herbert, Philadelphia, Pa.		Touring
Commercial Garage, Tacoma, Wash.		Roadster
W. H. Johnson, Cedar Rapids, Ia.		Touring
C. B. McAlister, Washington, Pa.		Touring

CHAMBER ENDORSES TRUCK CONVENTION

And Dodge Bros. Are Admitted at Meeting at Christmas Cove.

At the business meeting of the directors of the National Automobile Chamber of Commerce, held last week at Christmas Cove, Maine, Dodge Brothers, manufacturers of motor cars, Detroit, were admitted to membership in the Chamber.

The directors endorsed the plan of the Commercial Vehicle Committee for a convention of commercial vehicle interests to be held some time in the fall, the date and place to be selected at the September meeting of the Chamber. Besides routine matters there were interesting reports from committees on patents, traffic, good roads, legislation and shows, and there was an interesting program of sports.

President Charles Clifton presided, while the others in attendance included: S. D. Waldon (Packard); Wm. E. Metzger (Argo); Albert L. Pope (Pope); H. H. Rice (Waverley); Wilfred C. Leland (Cadillac); Roy D. Chapin (Hudson); L. H. Kittredge (Peerless); C. C. Hanch (Marmon); Col. George Pope, treasurer; S. A. Miles; Alfred Reeves, general manager; Charles Thaddeus Terry, counsel; and by invitation, Thomas Henderson (Winton).

The members of the party were guests of Samuel A. Miles and there were three days of the house party. In the competitions many of the gray-haired presidents and motor car officials supplied athletic ability of an order that surprised their associates.

Everyone participated in the sports, there being a tie between the Blues and the Grays with 20 points each, necessitating a run-off at the meeting next summer.

New Distributer For the S. G. V.

The New York representation of the S. G. V. Motor Co., Reading, Pa., has undergone a change. A new company headed by Allen Corey, son of former President W. E. Corey of the United States Steel Corp., has been formed to distribute the S. G. V. in the metropolitan territory. The company is styled Whitefield Motor Car Co., Inc., and its capital stock is $175,000. Associated with Corey in the venture are D. W. Dilworthy, treasurer, and Harold W. Carhart, Seth Barton French and Morgan J. O'Brien, Jr., directors. Frank Bowen is general manager. Salesrooms have been established at 242 West 59th street, New York city.

Seattle Salesroom For Mercer.

George R. Bentel, at present head of the Simplex & Mercer Pacific Coast agency, has completed arrangements for the opening of a Mercer salesroom in Seattle, Wash. It is to be used as a distributing station for the entire Northwest. It is likely that similar stores will be opened a little later in Spokane, Tacoma and Portland.

Fisher Bodies Get More Room.

A five-story building located at Forrest and Grandy avenues, Detroit, has been acquired by the Fisher Closed Body Co. and the Fisher Body Co., which are both under the same management. This will give the concerns about 100,000 square feet of additional floor space and enable them to employ about 600 more men.

Kerns Buy Herreshoff Factory.

The plant of the bankrupt Herreshoff Motor Co., Woodward avenue, Detroit, has been purchased by Ernest C. and Otto Kern, Detroit dry goods merchants, for about $100,000. The plant may be sub-let to a new motor car manufacturing company.

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17 EVENTS SLATED FOR GALVESTON BEACH MEET

Sand Being Put in Condition for Fast Time—Drivers Already Practicing and Possibilities are Excellent.

Work on the Galveston Beach, at Galveston, Texas, where there will be a four-day racing carnival beginning July 30, has had the effect of so smoothing and hardening the sand surface that the drivers, who are already at work practicing, speak highly of its possibilities in the way of speed. It will be still further improved, however, until it is in as perfect condition as possible by the first racing day.

Following is the list of events:

THURSDAY, JULY 30

Ten miles. Class E. Non-stock. For cars of 230 cubic inches and under. Prizes, $75 and $25.

Ten miles. Class D. Non-stock. Division 6, for cars of 231 to 300 cubic inches. Prizes, $75 and $25.

Fifteen miles. Class D. Non-stock. Division 7, for cars of 301 to 450 cubic inches. Prizes, $100 and $50.

One mile. Class D. Free for all. Flying start. For Galveston beach mile record. Prize for best time, $50. Additional $50 if Galveston beach record of 31:11 seconds for flying start mile is lowered.

One hundred and fifty miles. Class D. Free for all in three heats, 50 miles to be run each day with limit of one hour to be placed on the first two heats. Cars to be credited with the distance covered within the time limit each day up to the 50 miles. Prizes to car making the best time for the 150 miles: First, $1,500; second, $750; third, $300; fourth, $200; fifth, sixth, seventh and eighth, $100 each.

FRIDAY, JULY 31

Ten miles. Dealers' race. Class E. For cars of 231 to 300 cubic inches. Open to cars owned by dealers who have been in the business since January 1, 1914. Prizes, $50, $30 and $20.

Ten miles. Dealers' race. Class E. For cars of 303 to 450 cubic inches. Open to cars of dealers who have been in the business since January 1, 1914. Prizes, $50, $30 and $20.

Amateurs' race for Galveston Beach cup. Ten miles. Class D. Open to all amateurs. Prize, silver Galveston Beach cup. Winning the cup two successive years gives permanent possession. Entrance fee will be refunded if the cars entered start.

Slow race. Class E. One-half mile. Free for all amateurs. Standing satrt. Cars may be started with low or intermediate gears and must be engaged in high before passing a point 50 feet from the tape, remaining high until the finish. Clutch pedals or levers to remain untouched from 50-foot mark to finish. Each car to carry an official observer. Stalling the motor will disqualify the car. Electrical starters to be disconnected after the engine is started before crossing starting tape. Last car to cross the tape is declared winner. Prize, Galveston slow race cup.

SATURDAY, AUGUST 1

Ten miles. Class E. Non-stock. For cars of 161 to 300 cubic inches. Prizes, $100 and $25.

Twenty miles. Class E. Non-stock. For cars of 450 cubic inches and under. Prizes, $120, $50 and $25.

One mile. Class D. Free for all. Flying start for the world's record. First prize for lowest record, $50. Additional prize of $150 to car lowering world's record for flying start mile.

Ten miles. Class E. Non-stock. For cars of 230 cubic inches and under. Prizes, $75 and $25.

One hundred and fifty miles. Second heat of Galveston Cotton Carnival Sweepstakes for $3,250 cash prizes.

MONDAY, AUGUST 3

Ten miles. Class E. Handicap. Prizes, $125, $50 and $25.

One hundred and fifty miles. Third and last heat of Galveston Cotton Carnival Sweepstakes for $3,250 cash prizes.

Consolation race for non-winners. Free for all non-winning contestants in prior events. Prizes, $100, $50 and $25.

Pope Creditors Oppose Auction.

An appeal to the Supreme Court has been filed from the decision of Judge Marcus H. Holcomb of the Superior Court, Hartford, Conn., granting an order for the receiver of the Pope Mfg. Co. to sell the personal property of the company in Connecticut. The appeal was perfected by Edward E. Blodgett, of Boston, counsel for the creditors' committee. The decision of Judge Holcomb, after a hearing July 16, authorized Receiver George Pope to sell the property at his discretion, either at public or private sale. The appealing creditors were in favor of accepting the offer made by a Boston syndicate some weeks ago of $1,800,000 for the entire property, which included that in Hartford and the bicycle plant in Westfield, Mass.

Hartford Show Set For Sept. 2-7.

The Annual Automobile Show of the Connecticut Fair Association, Hartford, Conn., will be opened September 2 and close September 7. It will be held in Exhibition Hall, which provides 15,000 square feet of floor space, and it is expected that it will be one of the largest shows ever held in connection with a state fair. B. B. Steiber is the manager; his address is Room 25, Hartford Trust Co. Bldg., Hartford, Conn.

Metz and Mercer Win Amateur Races.

Motor car races in which all the drivers were amateurs were held in Springfield, Mass., Saturday, July 25, and a big crowd witnessed a number of well-contested events. No little excitement was caused by the win of a Metz stock runabout over a Mercer; the little machine had a handicap of 100 yards and finished the two milesi n the lead, the time being 3:07⅗. A National won a 3-mile event in which it was pitted against a Mercer and a Knox. A Mercer won the 3-mile flying start and the same machine won the 4-mile free-for-all and a 2-mile event. The little Metz won two more races, both 2-mile events for light runabouts.

WORKING TO GET COURSE AT ELGIN IN FAST SHAPE

Prize Money This Year More Than in 1913—Best American Drivers Casting Eye at Road Race Cash.

Strenuous efforts are being made to get the course into such excellent condition for the Elgin road race, which takes place August 21 and 22, that the time will be faster than last year, when Gil Anderson sent his Stutz over the course at an average speed of 71.5 miles an hour.

To the prize money has been added $1,000, so that each day's winner will take $2,000; second men will take $700, and third $300. The contestant who makes the fastest lap on the first day will take the $200 which has been offered by Martin Kavanaugh, and a similar prize for the second day has been offered by Harry Vissering.

The Rudge-Whitworth Co., Coventry, England, has offered $200 for the first and $100 for the second car to finish, provided Rudge-Whitforth detachable wire wheels are used.

So far most of the cars entered are eligible for both races; the limit for the first day is 450 cubic inches piston displacement, while the second day is free for all. The entry list up to date is as follows:

Car.	Driver.
Mercedes	**De Palma**
Peugeot	**Burman**
Peugeot	**Not named**
Stutz	**Oldfield**
Stutz	**Anderson**
Sunbeam	**Grant**
Sunbeam	**Babcock**
Duesenberg	**Rickenbacher**
Marmon	**Patschke**
Marmon	**Heineman**

Other entries which are imminent are two Mercers, one of which is to be driven by Spencer Wishart, who is now in Europe on his honeymoon but will return in time to get his car into shape, and the other by Edward Pullen, who drove the winning Mercer in the Grand Prize; three Maxwells, piloted by Hughes, Tetlaff and Carlson; the King, piloted by Klein; Brock's Ray; d'Alene's Marmon; Mulford's Peugeot. Other cars looked for are two more Duesenbergs, a Burman, a Buick, the Gray Fox driven by Wilcox, a Braender Bulldog, Great Western, Moon, White, Chevrolet, Case and others.

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Safety First Society Carries Out Public Test of Direction Signals

Half a Score of Rear End Direction Indicators Tried Out in Daylight and After Dark—Devices Various.

A demonstration of a number of ways in which the driver of a car can make known to those behind him whether he intends turning to the right or left or stopping was held Friday evening, July 24, under the auspices of the Automobile Technical Sub-committee on Street Traffic of the Safety First Society, New York.

The demonstration was held at West 119th street and Claremont avenue and was divided into two parts. At 5 P. M. the daylight test was made, and at 8:30 the dark test, in which the illuminating features were brought out. The cars carrying the signals were sent, one at a time, around the block, paced by a motorcycle and followed by the committee car. In all cases the signals did what was required of them.

The Automobile Technical Sub-committee consists of A. B. Cumner, chairman; David Beechoft, Arthur J. Slade, George H. Robertson, Joseph Tracy and Frederick H. Elliott, secretary of the society.

The following brief descriptions of the devices shown will serve to give an idea of the many tentative solutions of the problem of eliminating the danger of accidents from rear end collisions:

The Walz Auto Direction Signal, shown by E. A. Walz, Jr., 505 5th avenue, consists of a metal casing attached to the rear of the car, having three glazed openings behind which are electric lights. Two of the openings are at the right and left of the device, near the top, and are quite large, while the third, below them and in the middle, is smaller, is fitted with a red lens and is the regulation tail light. The larger openings are illuminated by the manipulation of a switch under the driver's control.

When the one on the right is lighted up it shows an arrowhead pointing to the right, indicating that the car is about to turn to the right; on the other side the arrow, of course, points to the left. Illuminating both arrows at the same time indicates "stop."

The device exhibited by James M. Pugh, 1978 Bathgate avenue, Bronx, is of the shutter type, there being a horizontal row of metal slats that can be turned with either of their flat sides outward, or edgewise. The flat sides are lettered "left" and "right" and the device is operated by magnets controlled by a switch under the driver's hand. An electril light illuminates the letters at night and a red tail light is part of the device.

What looked like a diminutive railroad signal attached to the right rear fender was the signal devised by Lester D. Mayne, 110 West 40th street, New York. An arm carrying three lenses in a row is pivoted to swing across the face of an electric light carried on a standard. The side lenses are lettered "L" for left, "R" for right, and the middle one "S" for stop; the control, which is through a steel cable operated by a sort of selective lever working in a notched plate, causes the desired lens to be brought in front of the lamp. The lever is worked by pressure of the driver's arm, so that he does not have to take his hand from the steering wheel.

The "Signatelle" was shown by Dr. Joseph Mandelbaum, 332 Fest 145th street, New York, and is of the semaphore type in that when the driver is about to turn to right or left the signal throws up an arrow-shaped arm pointing in the proper direction and at the same time rings an electric bell. When the car is to stop a slide goes up revealing the word "stop" in illuminated letters on a glass plate. At night each arrow carries two small electric bulbs.

The Auto Signalite is of less recent vintage than most of the signals shown, being already on the market. It has a horizontal cylindrical casing with an opening through which the words "right," "left" and "stop" appear when the roller device carrying the lettering is brought around by the driver. The device is made by the Auto Signalite Co., 737 7th avenue, New York.

The Grinden Art Metal Co., 427 Marcy avenue, Brooklyn, showed a signal with three glass panels, one on the right, one on the left and the third below the other two, with the necessary lettering for right, left and stop, the latter at the bottom. Lamps inside the casing illuminate the letters. This signal, the "Beconlite," gives a clear, sharp sign. A front signal will be added.

William Gibson, 440 East 156th street, New York, showed a signal with two lenses, one above the other, and illuminated by the same lamp. The lower lens, which is green, is covered by a brass shield ordinarily, and the upper lens, which is red, is left exposed as a tail light. When the car is to stop the green lens is uncovered automatically, being connected with the brakes, so that a red light shows above a green one.

The Au-To-C illuminator shown by Harry Scarles, 1187 Halsey street, Brooklyn, is an illuminated license number, the figures being formed on glass and thrown into sharp relief by a lamp behing the glass.

Perhaps the most unusual signal in the lot was the Auto-Block, shown by George A. Cole, of Hayes & Diefenderfer, 21 West 62nd street, New York. The signals are on the front mudguards. There are two yellow disks, each about 4 inches in diameter, and each with an electric lamp in its center. The disks are on the ends of long spring steel strips which, when levers are moved, shoot out 18 inches or so and allow the lamp and disk to wave up and down in a rather startling manner. The signal can be seen from either front or rear because of its projection. Both disks out at once means stop.

Edward Stern, 40 West 13th street, New York, showed the Nokolyd signal, which is of the illuminated type with lettered glass panels in front of an enclosed electric light. The signal was mounted on the right rear fender.

Motor Car Securities Quotations.

	July 25, 1913 Bid	July 25, 1913 Asked	July 25, 1914 Bid	July 25, 1914 Asked
Ajax-Grieb Rubber Co., com.	145	160	220	..
Ajax-Grieb Rubber Co., pfd.	94	100	90	..
Aluminum Castings, Pfd.	97	100	98	100
Chalmers Motor Co., com.	105	112	97	101
Chalmers Motor Co., pfd.	98	102	94	96
Firestone Tire & Rubber Co., com.	275	281	305	312
Firestone Tire & Rubber Co., pfd.	103	105	108	110
Garford Co., pfd.	85	95	75	95
General Motors Co., com.	27¾	29½	88	90
General Motors Co., pfd.	73½	74½	91	93
B. F. Goodrich Co., com.	29½	30½	23	24½
B. F. Goodrich Co., pfd.	91	92	88	90
Goodyear Tire & Rubber Co., com.	310	316	174	178
Goodyear Tire & Rubber Co., pfd.	98½	99½	97½	99
Gray & Davis, Inc., pfd.	..	..	98	103½
International Motor Co., com.	3	5	..	3
International Motor Co., pfd.	18	25	3	9
Kelly-Springfield Tire Co., com.	..	..	52	55
Kelly-Springfield Tire Co., 1st pfd.	..	..	73	75
Kelly-Springfield Tire Co., 2nd pfd.	..	..	90	95
Lozier Motor Co., com.	15	20	..	14
Lozier Motor Co., pfd.	..	90	..	40
Maxwell Motor Co., com.	2¾	3½	14	15
Maxwell Motor Co., 1st pfd.	24	26	43½	45
Maxwell Motor Co., 2nd pfd.	6	8	18	19
Miller Rubber Co.	133	137	138	140
Packard Motor Car Co., com.	..	..	..	112
Packard Motor Car Co., pfd.	98	102	97	99
Peerless Motor Car Co., com.	45	50	10	17
Peerless Motor Car Co., pfd.	..	96	..	50
Pope Mfg. Co., com.	9¾	10½	..	1
Pope Mfg. Co., pfd.	28	33	½	2
Portage Rubber Co., com.	..	45	..	30
Portage Rubber Co., pfd.	..	90	..	90
Reo Motor Truck Co.	..	11	12½	13⅞
Reo Motor Car Co.	19	21	20½	21½
Stewart-Warner Spdtr. Corp., com.	..	..	48	49½
Stewart-Warner Spdtr. Corp., pfd.	..	..	99	101
Studebaker Corp., com.	22½	23	32	32⅞
Studebaker Corp., pfd.	82	87	82½	86
Swinehart Tire & Rubber Co.	85	88	85	97
U. S. Rubber Co., com.	60	60½	56⅝	56¾
U. S. Rubber Co., pfd.	104	105	101	101⅛
White Co., pfd.	102	104	107	110
Willys-Overland Co., com.	5	62	87½	89½
Willys-Overland Co., pfd.	85	90	93	95

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HAYNES ADDS LIGHT SIX WHICH SELLS FOR $1,485

Similar to Other Haynes Products—Line for 1915 Includes Two Sixes and One Four—Unit Power Plant.

The line of cars manufactured by the Haynes Automobile Co., Kokomo, Ind., has been increased by the addition of a light six which sells for $1,485 and is the lowest-priced machine manufactured by this company. The new six is built along regular Haynes lines and differs from the larger cars chiefly in the matter of dimensions and weight.

Standard equipment includes one-man top, Collins quick adjusting curtains, rain-vision ventilating windshield, motor driven tire pump, one extra demountable rim, tire carrier, electric horn, headlight dimmer, robe and foot rails and full equipment of tools.

The complete line for 1915 includes two sixes and one four—Model 32, the four, at $1,660; Model 31, the big six, at $2,250, and Model 30, the new light six, at $1,485.

The power plant of the new six is of unit construction carried on a three-point suspension. The motor is of the L-head type with cylinders 3½ x 5, which gives a rating according to the S. A. E. formula of 29.4 horsepower. The cylinders are cast in a single block with valves completely enclosed. Oil is circulated by a plunger pump at the rate of half a gallon per minute and is splashed by dip pins on the ends of the connecting rods.

Gasolene is supplied to the carburetter by a vacuum system; the cooling water is circulated by a large centrifugal pump. Starting and lighting are effected by the Leece-Neville system, in which the starting motor and generator are separate units.

Ignition current is taken from the main storage battery through a Remy combined circuit breaker and distributor, one of the advantages of which is that is gives a hot spark at very slow motor speeds. The carburetter is a Rayfield and is heated by the exhaust. Vaporization of the fuel is facilitated by the casting of the intake manifold integral with the cylinders.

The transmission system includes a three-plate dry clutch with Raybestos facing, mounted on ball-bearings and readily adjustables; a three-speed selective gearset with shafts running on imported ball bearings, and full floating axle mounted on ball bearings.

The frame is arched over the rear axle and the rear springs are very long semi-elliptics. Wheels are of wood with 34 x 4 tires front and rear on Firestone demountable rims. The wheelbase is 121 inches.

Changes Among Prominent Tradesmen.

G. O. Wildhack, for four years manager of the Indianapolis branch of the Oakland Motor Car Co., has been appointed general traveling representative for the company.

George Edwards, Jr., former purchasing agent of the Michigan Buggy Co., has become identified with the purchasing department of the Dodge Motor Car Co., Detroit.

E. L. Baker has been appointed head of the service department of the H. H. Franklin Mfg. Co., Syracuse, N. Y., to succeed Ralph Murphy, who is now chief engineer. Baker has been connected with the Franklin engineering department several years and for the past year and a half has been resident engineer on the Pacific Coast.

W. C. Sills has been made general sales manager of the Chevrolet Motor Co. of New York, to take effect August 1. Sills, ever since the organization of the Chevrolet Motor Co., has had charge of the Boston branch and the New England territory. Sills, with headquarters in New York, will have charge of the marketing of the product of both the New York and Tarrytown factories, with entire control of the export business and the sales agencies in the North Atlantic states.

Grossman On Its Feet Again.

The Emil Grossman Mfg. Co., Brooklyn, N, Y.. which was placed in the hands of a creditors' committee January 20, will conclude the payment of all claims in full by Saturday, August 1, according to the statement of President Emil Grossman.

"At the time of the appointment of the committee," states Grossman, "I explained that our removal from Detroit and New York and the erection of three buildings and two kilns at our Trenton potteries, combined with the subsequent interruption, had caused a drain on our cash resources. We promised that if given an extension until July 1 we would pay the creditors 100 cents on the dollar, and this obligation will be fulfilled August 1, when the company will again be under the control of its own organization."

FRANKLIN LOWERS PRICE OF LATEST SIX BY $150

Newest Series in Continuous Production Plan Lists at $2,150—Bigger Bodies and No Increase in Weight.

Price reductions of substantial amounts constitute the chief features of the Series 6 cars of the Franklin Automobile Co., Syracuse, N. Y., which have just made their appearance. The single chassis design is adhered to, and this has come in for only a few changes, none of them affecting the general character of the machine.

The price of the roadster and touring car has been reduced $150, the coupe $350, the sedan $200 and the Berlin $200. The present prices are $2,150 for the roadster and touring car, $2,600 for the coupe, $3,000 for the Sedan and $3,200 for the Berlin.

An increase in body size has accompanied the decrease in price. The seats are higher at the sides and the upholstery is finished off with a roll around the edge, which gives a pleasing finish. A slight alteration in the hood appearance is due to the substitution of a shutter effect for the grill formerly used at the front end.

The Dyneto starting-lighting system has been considerably simplified and is lighter and more accessible. The driving gears in the rear axle are of the skew type instead of the more usual bevels, the result being a quieter running axle. The standard finish is in Brewster green with black trimmings. Bodies are of aluminum over wood framing, and the hood also is of aluminum.

The manufacturers state that notwithstanding the increase in body size there has been no increase in the weight of the machine, economies having been made in other direction. The tires regularly fitted are Goodrich Silvertown cords or Goodyear power-savers.

Poertner Now Jeffery Distributer.

The Poertner Motor Car Co., New York city, has been appointed eastern distributer for the Jeffery. The Poertner company, of which William C. Poertner is president, heretofore has handled the National and Waverly cars and will continue to carry these lines in addition with the Jeffery line. However, the salesrooms, now located at 1922 Broadway, will be removed to 1759 Broadway, affording more ample accommodations.

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MOTOR WORLD

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DAVID BEECROFT, Managing Editor
S. P. McMINN RAY W. SHERMAN HOWARD GREENE

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Take a Day Off!

It is logical to expect that a dealers' organization should exist for work—for helpful, cooperative work that will make light of the problems of the individual by centering upon them the attention of all; but it may also exist for play, for recreation.

The business meetings of such a body serve a valuable purpose in that they draw the individual members together and make for better acquaintance; but how much better for this purpose is a day of play!

No matter how hard a number of ordinarily separated individuals may work together on occasion, it is a pretty well established fact that they will play together a great deal harder and in doing so will the more firmly cement those business friendships which are so essential to harmonious action in work for the welfare of all.

Brooklyn Dealers Prove It

Proof of this theory was furnished by the Brooklyn dealers who dropped their cares last week and communed with Nature and with each other in a one-day outing. They all returned to their work knowing each other better and consequently better able to cope with their business problems.

There should be more of these one-day outings; it scarcely is advisable to stretch them out to two days or three, for enough is plenty; there are few men who cannot afford to drop their duties for one day and play.

It is easy to get up an outing of the kind and this is the time of the year to do it. Notify each member of your organization that on a certain day an outing will be held. Charge each one a nominal sum to defray the expense of serving one or two meals, as the case may be. Arrange a program of sports similar to the program of the Brooklyn dealers. Have each dealer donate a prize for one of the events.

Get together and play while the playing is good; take one day off and prepare for the hard work that is to come. It will do you good and it will do your organization good.

System Judiciously Tempered

System in a garage is a good thing, an indispensable thing. But it is like everything else. It must be used judiciously and applied with common sense. Everyone knows the facetious story of the man who installed an elaborate business system and then gave up business to attend the system.

Various conditions and circumstances modify the requirements of a garage in the matter of system. A garage in one locality might require a more or less elaborate set of cast-iron rules while an establishment of exactly the same sort and size in another locality might get along best with few inflexible regulations.

There is a garage well uptown in a large city where there is an atmosphere of quiet and orderliness, and yet of "free-and-easiness," that is unusual. One can go in there at any time—and take his wife along—and not hear any of the too familiar loud exchanges of more than doubtful pleasantries between employes.

Everything Runs Smoothly

Cars are well taken care of and go in and out without red tape or bother. If a customer purchases supplies it may be noticed that sometimes he pays cash, sometimes he signs a receipt for them and sometimes he just gets what he wants and goes away.

The proprietor is making money and, whether his reasons for success are the right ones or not, they are entitled to a good deal of respect if only because the owner is making good.

He believes that it is not right to treat all customers alike. A man who has been a customer for some time, therefore, is to some extent a privileged character. He gets what he wants without any red tape or delay, and it is charged to him without his signature on the slip.

"What's the use of holding him up to sign the slip when I know perfectly well he'll pay?" is the proprietor's query. "It doesn't do any good at all, and it takes time and makes trouble—not much, but some. I have kept a good many customers against competition by making things easy and simple, so that they hated to leave—and didn't."

Of course, an absolute stranger pays cash. An established customer signs receipts for what he gets until he has found his place in the proprietor's mental catalog—and then he sometimes continues to do so. As a rule they do not. As for difficulties arising from such methods, the proprietor states that they are so few and far between as to be negligible.

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Brooklyn Dealers Forget All Business for a Day of Play

And They Played Hard—It Was a Care-free Outing With All the Sports and Games of Their Boyhood Days.



CHARLIE TATE "GENERAL MANAGING" THE OUTING

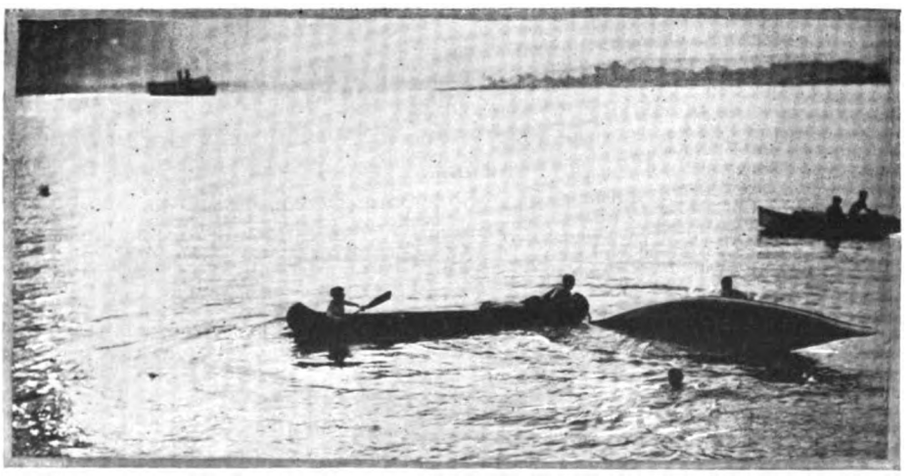
Brooklyn dealers dropped their work one day last week and played in the sunshine, and, as somebody or other has said, "Thereby hangs a tale." The Brooklyn (N. Y.) Motor Vehicle Dealers' Association is responsible for the play and the tale and the "time out" from business.

On Tuesday morning more than 250 dealers, some of them members of the association and some of them the guests of members, clambered into their cars and sped away over the roads to College Point, which is on Long Island Sound and is part of the island itself. To be specific, they went to Witzell's Grove, which has quite a reputation of its own as a grove. And they went simply because the association holds each year a rally-'round-the-flag-get-together outing. Tuesday's gathering celebrated the fourth and it likely will go down into the history of the organization as one of the best, if not the best.

The gathering served more than one purpose. It served to provide a legitimate excuse for a general working off of an exuberance of spirits begot by a good selling season, and brought the dealers closer together; it renewed acquaintances which had been permitted to lapse; it sent the dealers back to their respective businesses knowing each other the better and the better able to cope with the petty troubles that always arise



TOP — PRESIDENT H. L. CARPENTER. CENTER—TREASURER I. C. KIRKHAM. BOTTOM — MACGOWAN WINS. JOHNSTON SECOND. SOME SPEED!



AINSLEE AND MARSH DUMPED ALL CANOE-TIPPING COMPETITORS

to try tempers. They all had a ripping good time and they won't forget it for a long while.

One of the excellent features of the whole program was that it did not cost much. There was nothing cheap about it; it was inexpensive, that is all.

Each dealer rode to the meeting place in his own car—providing he was a dealer in cars. Dealers in allied lines found plenty of room in the car dealers' cars. Hence, the transportation problem was solved.

It cost the organization practically nothing to run the outing, for each man paid for his own ticket. These tickets cost $4 each and a protracted search has failed to bring to light a single member with even a semblance of an idea that he did not get the $4 worth of fun—good, wholesome fun and enjoyment.

The tickets defrayed the expense of serving two meals and provided for the necessary "pop" that subdued the thirsts of the multitude. The first meal, which was styled breakfast, was served almost immediately upon arrival at the grove. Formal, or rather informal, dinner was served at 7 o'clock, after the conclusion of the games.

The grove where the gathering was held is situated on Long Island Sound and is about as pretty a spot as could have been found within a radius of 12 or 15 miles of the center of the motor car trade in Brooklyn. There are shade trees aplenty and great rolling lawns and about two miles of beach for the swimming contingent. Also, there are several shelters for use in case of summer showers, and not even the inevitable shower could dampen the enthusiasm of those who peopled the grove on Tuesday.

The games were the real reason for the gathering, of course, and the way they were run off would do credit to a Sulli-

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van. Charlie Tate, who knows everybody in Brooklyn and whom everybody knows, was responsible for everything. And in addition to acting the part of general manager, starter, referee, judge, time-keeper and very nearly everything else—with the help of a megaphone—Tate acted as one of the principals in the single wrestling bout that was put on. It is understood that he still carries the scars of a desperate battle with the mosquitoes, who lit—and bit—on that part of his anatomy not covered by a bathing suit. The mosquitoes scored in every event and between them—but no one minded them.

In the games, Kirkham, Jr., a smooth-faced chip of the old block, who, by the way, is the treasurer of the association, was easily most in the limelight. Kirkham entered everything but the fat man's race; not even his father could get into that. Also he won the three-legged race with Cowan, and the sack race; wherefore he is toting a beautiful silver cup and an inner tube.

As might have been expected, the shoe race provided the most fun for those who were lucky enough to be on the side lines. The three-legged race was a close second from the mirth-provoking point of view, and the tug-of-war third. In this event the combined pull of a dozen dealers proved too much for the rope, which parted. Eventually, however, another was obtained and Meyers' team pulled their opponents out of their seats.



THE BATTERY CONFERS—MILLER AND BASTIAN

Later in the afternoon the canoe-tipping contest provided more than one hearty laugh. It was necessary to run this event off in heats, the final going to Ainslee and Marsh after a tremendous struggle in which Doc Miller and Ready were tipped out into the briny.

The baseball games which preceded the field sports proved well-contested struggles. Two games were going at once, the U. S. Nobbys vs. the U. S. Nobbys in one field and the U. S. Nobbys vs. the U. S. Nobbys in another. President Carpenter of the dealers' association umpired one game, in spite of tortoise rimmed spectacles, and J. Labou umpired the other.

The Martin-Evans team played the best ball, thanks to the able assistance of Bastian, southpaw. This team defeated Julius Bindrim's team 5-2. In the other field, Ellenbeck's team swamped Bill Severn's men under a 11-3 score. That 11, by the way, remained 11 during all the last half of the game; Severn was batted out of the box and Kesler took



WALTER LEE'S DUFFY-LIKE FINISH IN THE 100 YARDS



JOHNSTON OF NEW YORK WITH THE BIG STICK



THE DEALERS MANAGED TO STOP THEIR PLAY LONG ENOUGH TO POSE FOR A PICTURE

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his place. He held the rival stickmen down to one hit and no runs.

In the play-off the Martin-Evans team won easily by the score of 6-0 and becomes possessor of the Brooklyn Times trophy, which it will hold for the period of one year.

In addition, each of the individual players received silver medals, donated by the Brooklyn Eagle.

All told there were more than 50 prizes and all of them were donated by members of the Brooklyn trade and their friends. Following is a summary of the events:

Patterson & Coane, case of whiskey; Mr. Wood, umbrella; Firestone Tire & Rubber Co., clock; Feltman's, Coney Island, cup; Stauch's, Coney Island, cup; Henderson's, Coney Island, cup; Times, cup; Shelburne Hotel, cup; Mumm, magnum champagne; Eagle, medals for baseball team; Martin-Evans Co., raincoat; Jack Peacock, clock; Shanahan Thompson Corp., pair of lamps; Fisk Tire Co., one shoe; Lee Tire Co., one tube; Ninssen's Hotel, box of cigars; Perry's Inn, box of cigars; Ulmer Palace Hotel, bottle of whiskey; Cafe Beverly, bottle of whiskey; Interborough Brewing Co., six cases of beer; Carpenter Motor Vehicle Co., safety razor set; F. Koch, two tubes; Interborough Park, unknown prize; Julius Bindrim, baseball outfit; Ajax Tire Co., one tube; King Tire Co., two tire covers; C. Muzzey, trouble lamp; Farrell Auto Co., interliner; Guffanti, bottle of wine; Sloane's Tavern, bottle of whiskey; London Life, 1,000 cigarettes; Reedy Bros., mirrorscope; Oriental Rubber & Supply Co., dash clock; Frank Ainslee, pair of socks; Ravenhall, cup; Vacuum Oil Co., half barrel of oil; Kelly-Springfield Tire Co., two tubes; Mobo Soap Co., half barrel of soap; United States Tire Co., baseball suits; Stewart Speedometer Co., speedometer; National Radiator & Lamp Co., tail lamp; Paul Marko Co., one battery; D. Friedlin's, one Panama hat; Banzer & Schluchtner, set of wrenches; Kleinschneith Cafe, box of cigars; Staetzer's Cafe, one stein; Reo Motor Sales Co., cane; Regent Theatre, cigar holder; Colonnade Treatre, cigarette holder.

Following is a summary of the events as run off:

Tug-of-war—Won by Meyers' team. Meyers, captain; Johnston, Wolf, MacGowan, Adams and Fortier.

100-yard dash—Heats won by Lee, Sanford, Kirkham, Jr., Rippenger, Schoonover; semi-finals won by Lee and Sanford; final won by Sanford; second, Lee.

Fat man's race, 50 yards—Heats won by MacGowan and Kennedy; final won by MacGowan; second, Johnston.

Shoe race—Won by E. C. Blake; second, La Mond; third, Ainslee.

Three-legged race—Won by Cowan and Kirkham, Jr.; second, Bindrim and Jungkind.

Potato race—Heats won by Blake, Lee and Freedline; final won by Blake; second, Lee.

Egg and spoon race—Heats won by Peacock and Jungkind; final won by Jungkind; second, Peacock.

Sack race—Heats won by Kirkham, Jr., Freedline, Butterley and Bell; final won by Kirkham, Jr.; second, Butterley.

Canoe-tipping contest—Won by Ainslee and Marsh.

Quarter-mile rowing race—Heats won by Bell, Cowan, Kesler, Zeiner, Fortier and Kesler; semi-finals won by Bell, Zeiner and Kesler; final won by Bell; second, Kesler.

50-yard swimming race—Won by Lee; second, Cowan.

Among those present were the following:

H. L. Carpenter, president of the Motor Vehicle Dealers Association; C. J. Maxson, Charles Batt, J. T. Peacock, George Elwell, Joseph Wood, T. J. Woods, J. Diuguid, C. Diuguid, H. Diuguid, Julius Bindrim, F. Miller, S. Miller, Del Martin, F. Randall, A. C. Corwin, F. Ainslee, F. Rippenger, Herman Ehler, W. W. Griffin, Walter Flessel, I. C. Kirkham, Lew Allen, C. M. Bishop, Walter Manning, J. T. McCormick, Jr., B. T. Bishop, Martin Casey, A. Yager, C. S. Tate, Dan Swander, J. Bastian, W. T. Stewart, secretary New York Dealers Association.

J. O. Horton, F. C. Joslin, F. B. Wolff, N. T. Laramee, H. Kramer, P. McKernin, F. Ainslee, E. C. Blake, J. W. Marsh, F. Remson, J. T. Peacock, J. B. Dudley, W. J. Cornwell, E. O. Bolling, H. R. Ackerly, N. H. Connell, E. S. Lynch, S. P. McMinn, S. C. Caillard, S. Dorin, Walter R. Lee, F. D. Smith, S. C. Zeiner, J. F. Travis, D. Martin, F. H. Miller, A. M. Dickel, J. K. Bastin.

C. G. Wright, R. S. Sanford, V. Sofgren, H. P. Marsh, L. E. Jacob, I. G. McNamara, W. W. Griffin, Clarence Bedell, William J. Houldcroft, Frank J. Koch, Ambrose B. Ostrom, Fred J. Picket, George H. Kennedy, Jr., Henry Feisel, W. E. Sprague, C. J. Masson, James R. Brennan, L. W. Weil, S. R. Masterson, F. C. Kemgeter, J. J. Twigs, R. W. Sykes, Jr., Frank J. Byrne, A. B. Jennings, Joseph Wood, E. Bell, W. J. Cornwell, Henry Acker, J. J. McGoman, Jacob Muller, L. A. Low, J. Musgrove, James Lynch, Louis L. Levine, David Freedline, William Ellenbeck, A. J. Schaaz, Matty Matthews.

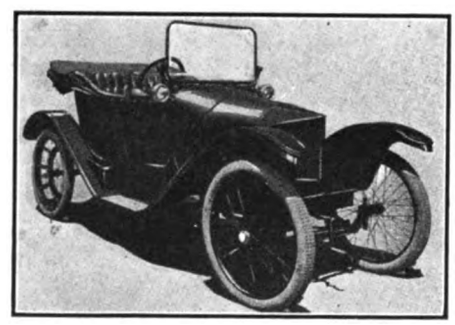
Billy Boyd, A. S. Thompson, W. A. Sellon, A. W. H. Levasier, C. A. Phipps, A. H. Etzel, M. P. Farrell, C. M. Rider, Alfred Wilmarth, N. Fleury, F. G. Strobel, W. Stark, Walter Hyer, W. E. Severn, W. G. Bedford, J. B. Back, C. H. Kienle, Joseph B. Jowitt, O. J. Duhamel, J. B. Murphy, V. Tillotson, Tom Butterly, J. Kenney, M. J. Sullivan, Edwin S. Carey, James C. Smith, David Simons, George Bauer, J. A. Campbell.

W. D. Kowenhoven, S. W. Kesler, J. A. Schoonover, B. D. Meyer, H. F. Meyer, W. R. Marsh, D. F. McNabb, F. Trautwein, N. J. Laubendorfer, J. R. McShane, W. P. Philips, C. Cowan, W. Dunn, H. Wetmore, H. Suydam, E. C. Hopson.

W. L. Gray, S. Wilmarth, J. N. Andrews, B. Stolzenberger, M. J. Wolff, Al Fefelle, R. P. Lumley, F. Standish, N. S. Lamb, G. W. Fortier, W. W. Adams, J. Ready, F. Marlborough, W. Ready, O. W. Miller, A. Jungkind, J. M. Lamond, J. E. Monte, C. E. Schroeder, R. M. Kirkman, F. D. Smith, S. C. Zerner, J. F. Travis, D. H. Martin, F. H. Miller, A. M. Dickel, J. K. Barton, F. Remsen, A. E. Randall, J. G. Stoelzer, V. J. Sedworth, J. B. Dudley, E. O. Bolling, H. R. Ackerley, N. H. Connell, G. C. Gaillard, T. Doris, N. B. Lee.

Koppin Light Car on the Market--$285

Detroit Man Produces V-Motor—Equipment $100 Extra.



KOPPIN $285 LIGHT CAR

The Koppin Motor Co., Fenton, Mich., of which H. S. Koppin, well-known real estate man, is the president, now has ready for the market its first vehicle. This is a light car powered with a two-cylinder V-type motor, with a bore and stroke of 3½ and 3⅝ inches and developing approximately 13 horsepower. It sells for $285.

From the motor power is transmitted by friction transmission and Peerless V-belts to the rear wheels; lever steer is used. The wheelbase of the car is 96 inches and the tread 36 inches. The body provides accommodations for two passengers, seated side by side.

With standard equipment, the car lists at $385. The equipment includes top and envelope and side curtains, windshield, electric side and tail lamps fed from a 60-ampere-hour 21-plate battery, horn, repair kit, pump and tools.

The manufacturer of the cars is being carried on in the plant of the old Fenton Cyclecar Co. and temporary offices have been established at 305 Breitmeyer building, Detroit.

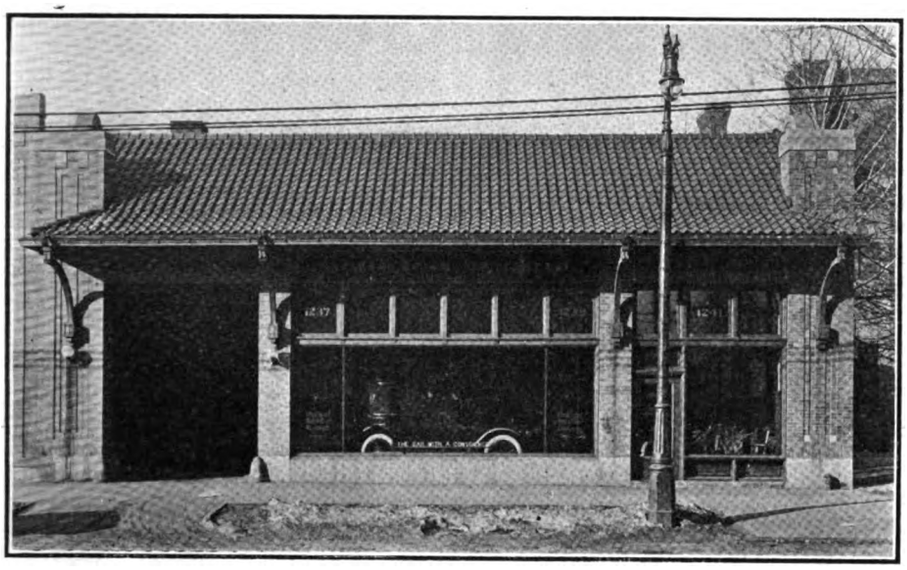
Overland Year's Business $6,500,000.

The Willys-Overland Co. on June 30 concluded the most successful year in its history, with an increase in output of slightly over 40 per cent and nearly as large a gain in gross earnings. Net profits are expected to be between $6,500,000 and $7,000,000, or over 30 per cent on the $20,000,000 common stock, now receiving 6 per cent dividends. In August, 1913, the common was given an extra 5 per cent dividend, calling for $1,000,000. This could easily be repeated this year. President Willys, however, plans another large increase in output this year, and the profits above the regular dividends, which call for about $1,500,000, may be left in the business.

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This Branch Sells Car Quality, Not Service

Owners Carefully Instructed in Caring for Their Cars and Required to Sign a Release— All Repairs on Cash Basis.



FRONT OF DETROIT OAKLAND BRANCH, SHOWING ITS DISTINCTIVE APPEARANCE

The Oakland Motor Car Co.'s Detroit branch has one of the most attractive and business-like salesrooms in the city of Detroit. The building is unique. It is probably, at least in external appearance, unlike any other garage in the state of Michigan, if, indeed, it has a duplicate in the country.

It stands out from the many other garages on Woodward avenue very conspicuously and, by its very pleasing oddity, is forever attracting favorable attention. From an advertising and sales standpoint the building presents the force of positive individuality.

Establishment Is Logically Planned.

Approximately 40 feet of frontage are used for salesroom windows and entrance; 15 feet are used for a side driveway to the repairshop and service station in the rear. From which it will be seen that the Oakland branch is not conspicuous because of its size. There are many garages and salesrooms with twice the frontage. But the Oakland makes telling use of what space it has. This fact in connection with its architectural distinctiveness more than compensates for the moderate size of the place.

Step inside the Oakland branch, and before you have gone many feet along the diagonal aisle you will be approached by Manager W. R. Tracy or one of his assistants. If the salesmen are busy and the manager out, the stenographer or cashier will instantly step forward and ascertain your wishes. There are no long waits. "Everyone who enters our salesroom should get just as quick attention as he would in any retail store in any line of business." That is part of Manager Tracy's creed.

Six Cars Well Displayed.

The six cars shown in the salesroom arearranged to the very best possible advantage. The accompanying plan shows how the space is occupied. At the left, near the window, is a table on which various parts are shown. To the rear are three desks. Two are used by salesmen and one by the stenographer, who is a man. At the right rear corner is a table whereon is kept a goodly supply of Oakland literature. Clean windows, freedom from dust, and splendid lighting are notable characteristics of this salesroom. Note that the partition between the drive and salesroom is glass, thus giving the driveway the benefit of daylight.

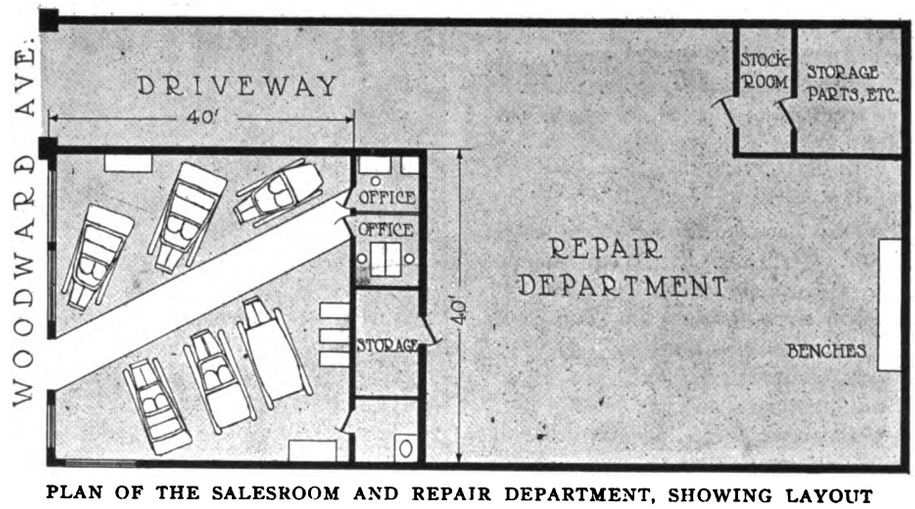
The diagonal strip of rubber dividing the salesroom floor leads straight to Manager Tracy's office. Here are 2 roller top desks. On one side sits Mr. Tracy, and facing him is his chief assistant. Through a plate glass window are seen the bookkeeper and cashier.

Business on a Business Basis.

"We take money enough in the front door," says Tracy. "Our great object in life is to keep it from shooting out the back door. Many dealers make ample money in the sales end and lose it in the repair and service end. Our idea, in brief, is to run this business just as we would run any business—to make every fact in connection with 'service' end in our selling talk. We claim that we are selling a finished product—a successful, proven car—not service. What a man should pay for we want him to pay for; what he shouldn't pay for we want him to have free of charge.

"Our idea is to give the reasonable and satisfactory service a man has a right to expect with his car. We keep a record of everything we do for our customers—and in this book is recorded every fact in connection with 'service' calls.

"This blank (page 17) shows exactly what I mean. Here you will observe is



PLAN OF THE SALESROOM AND REPAIR DEPARTMENT, SHOWING LAYOUT

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OAKLAND MOTOR CAR COMPANY

DETROIT BRANCH

DETROIT, MICHIGAN

Date.....

Oakland Motor Car Co.,
Detroit Branch
Detroit, Michigan.

Service Department

Gentlemen:-

In signing this statement, I acknowledge having been thoroughly taught and explained the operation and care of Oakland Car, Model_____Number_____ as follows:

1. - Oiling and doping

2. - Operation, Care and Handling of Electrical Apparatus.

3. - Driving Car.

Signed.....

EVERY PURCHASER IS REQUIRED TO SIGN THIS RELEASE AFTER HAVING BEEN THOROUGHLY INSTRUCTED IN THE CARE OF HIS CAR

the date, hour call is received, name of owner and where located at time the call came in. The next column shows nature of trouble. The fifth column shows the name of the service man and the time he started. The sixth has a place for entering the job number and the next column shows just when the service man returned. Then there is a space left for remarks.

"Every service call received during the year is entered here. We check this over frequently. It has proved an invaluable help in selling. First, it shows how quickly we get on the job. Second, it shows the nature of the troubles complained of and how soon we get the service men out to cure them. Third, it proves our contention that, while we do not in our selling talk emphasize 'service' as much as we do 'car quality,' we deliver the goods and get the few who have trouble out of it as quickly as possible.

Careful Record of Emergency Calls.

"We have a large number of owners in Detroit. Our car has been popular here. This book shows every call we have had since January 1st. This is all emergency stuff. Somebody can't get his car started; you see, the report shows he had 'no gasolene.' Then there's another forgot to add water to his batteries; and so it goes. Little things in themselves, but big to the man who is 'hung up.' That's one side of our 'service' and we are justly proud of it," says Tracy.

- Knowledge of Car Insisted Upon.

"There's another side. We don't propose to give all our profits away. On the other hand, if anything is defective we adjust it right away. No argument and no time lost. We keep a supply of parts on hand. In other words, we do not make the customer wait. We give just as quick action as if our car was made in Detroit. Some people say quicker. And if a man wants 10 things done—we try to do the 10—not 9, or 8.

"We insist on the man who buys an Oakland knowing all about its care and operation. We teach him how to drive and we teach how to lubricate, when, and where; and we lay special emphasis upon and give special teaching to insure the proper care of the electrical system. And when the customer has earned the whole list of essentials he is asked to sign this blank (at left), certifying that he has been given such instruction and understands the care and operation of the car and electrical system. If he doesn't know and understand it he naturally balks at signing this statement, and so we have a chance to teach him and show him till he does feel thoroughly confident.

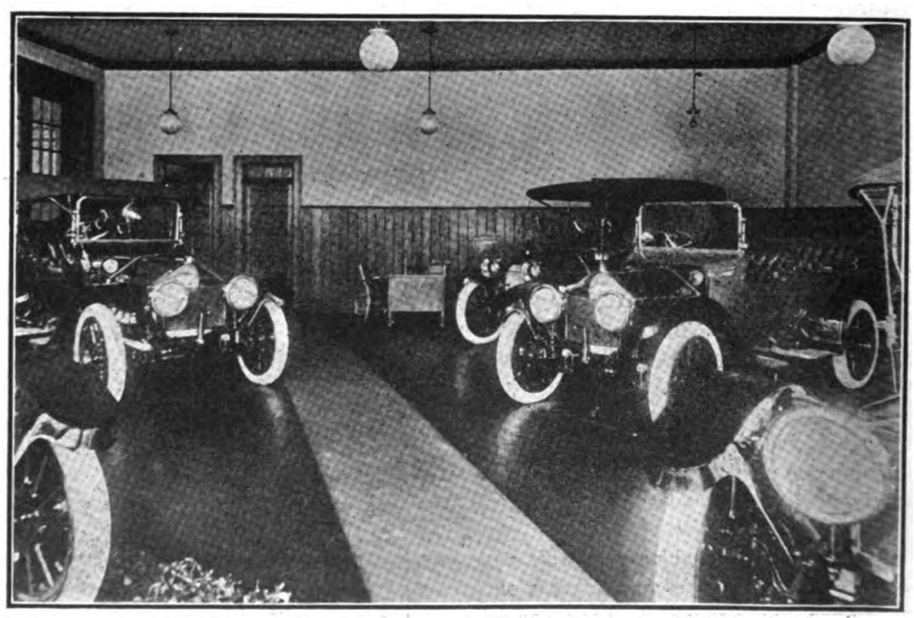
All Repairs Are Strictly for Cash.

"This blank (page 17) shows the complete battery record. It is of the utmost importance. It shows just how a man is looking after his batteries. In these days of electrical systems it is not strange that we regard proper care of batteries as highly essential. If we can get Oakland owners looking after their batteries in good shape we practically eliminate trouble from electrical causes."

"Do you garage any cars?" was inquired.

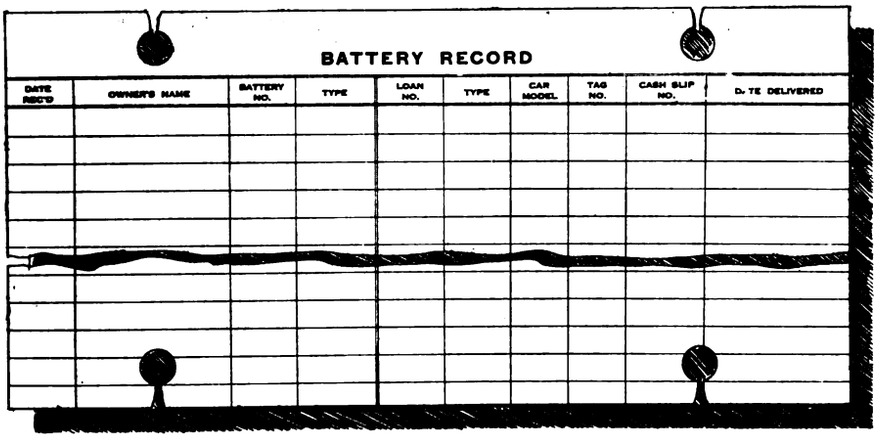
"No, we have not sufficient room. Besides, this is a selling branch, and it would complicate matters from an accounting standpoint. Therefore, we garage no cars and all repairs are strictly cash.

"That 'cash for repairs' sounds harsh, I know. But we have tried both ways and



GENERAL VIEW OF THE SALESROOM, SHOWING ARRANGEMENT OF THE SIX CARS ON DISPLAY

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BATTERY RECORD

DATE RECD	OWNER'S NAME	BATTERY NO.	TYPE	LOAN NO.	TYPE	CAR MODEL	TAG NO.	CASH SLIP NO.	DATE DELIVERED

FORM USED TO KEEP TRACK OF SERVICE RENDERED ON BATTERIES

find that there is less argument and more satisfaction for everyone concerned if the bill is paid on the spot. It saves us money. It makes the customer more careful in looking over his job before he accepts it. He doesn't take it out before it is entirely finished, as used to be the custom. And the cash system has numerous other advantages.

No Work Done Without Signed Order.

"One of the hardest and most necessary points accomplished was keeping customers out of the repair-room. That did not sit well. Car owners thought they were privileged to go anywhere the car happened to be. It has taken time to get them out of this idea. Now they do not see the job til it is completed and has passed the foreman's inspection."

One of the rules that has helped the Oakland repair-shop is that they never start any work without an order signed by the customer. Each order is numbered and parts are requisitioned against this order number. Time is recorded against it and, as all work is done by specialists (axle work and transmission work by one man, electrical work by another man, etc) each man is responsible for his particular class of work. Before going off one job and onto another, each man reports to the foreman and to the timekeeper. The foreman assigns men to new work and this is also reported to the timekeeper.

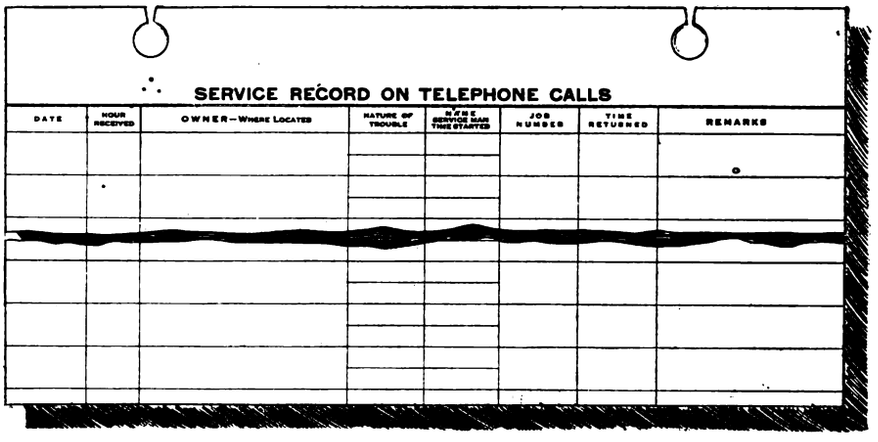
All repairs being cash, records must necessarily be up to the minute. A clerk in the stockroom prices all material as furnished and lists all time on the back of the shop order and cost sheet. This is placed in an envelope with stock requisitions and any other memoranda and gives a complete, accessible, correct and immediate record of the job. The foreman has a job card on which is written job number and work to be done. From this he assigns men and follows up the job. The shop order stays in the hands of the stock clerk until completed.

The original shop ticket is initialed by the various men doing the work as each particular phase of it is completed. This identifies the workman responsible for the job, and he knows it, and the foreman knows it, and the boss knows it. The result of this fixed responsibility is an intelligent and exceptionally high grade of workmanship.

Workmen Compelled To Be Careful.

When the job is completed and the records finished the shop ticket is put in the job envelope and the whole sent to the accountant for "Release." If the customer wants to go over the job in detail the foreman checks matters over with him. But the cashier has all the details for billing and pricing right on hand.

All fenders and cushions are covered and protected from grease and oil during repairs. The foreman inspects the job on completion and sees that the steering wheel, etc., is clean and the car completely ready for customer. The same degree of efficiency is maintained in the sales work.



SERVICE RECORD ON TELEPHONE CALLS

DATE	HOUR RECEIVED	OWNER—Where Located	NATURE OF TROUBLE	TIME SERVICE MAN STARTED	JOB NUMBER	TIME RETURNED	REMARKS

FORM USED TO MAKE RECORD OF EMERGENCY CALLS FOR SERVICE

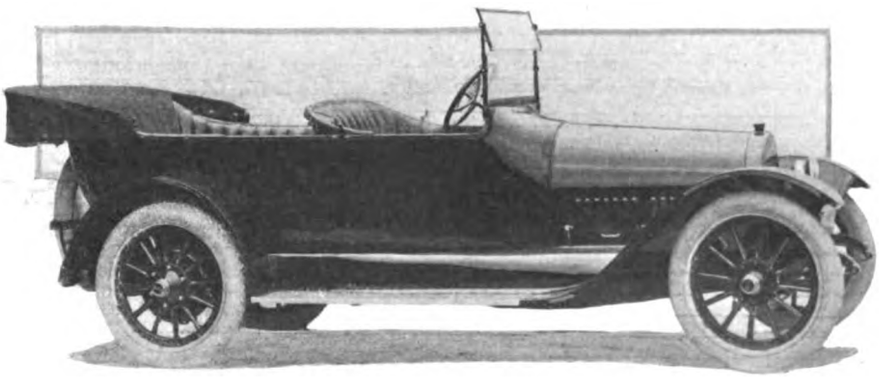


GENERAL VIEW OF THE SERVICE AND REPAIR DEPARTMENT OF THE DETROIT OAKLAND BRANCH

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Lower Prices for All 1915 Buicks

Reductions Range from $335, on Sixes, to $50 on Roadsters —Bodies Improved—Many Mechanical Refinements



BUICK SIX, THE PRICE OF WHICH HAS BEEN LOWERED TO $1,650

Price reductions and body refinements are the chief new features of the 1915 cars manufactured by the Buick Motor Co., Flint, Mich. Radical changes have not been found necessary, though what minor alterations have been made are of the sort that are conducive to greater comfort and greater efficiency. The small and large fours and the six constitute the chassis line, as in the previous season.

The price of the six has been reduced $335; the small four roadster $50, and the touring car on the same chassis $100, and the large four roadster and touring car $50 and $100 respectively.

The six now sells for $1,650; the 1914 price was $1,985. The small four with roadster body sells for $900 and with five-passenger touring body $950. The 1914 prices were $950 and $1,050, respectively. The large four costs $1,185 with roadster body and $1,235 as a touring car. The corresponding prices last season were $1,235 and $1,335.

In addition to the conventional outfits of tools, jacks and the like, all the Buicks, big and little, now are fitted with rain-vision ventilating windshields with inside operated curtains. The top and curtain equipment is a distinct improvement over what was previously fitted.

Motors have come in for practically no alternations except minor ones which tend to greater efficiency. The distinctive type of overhead valve engine with gearset in unit is adhered to, there being no differences in the cylinder dimensions. The type of drive enclosing the propeller shaft in a torsion tube also remains.

In order to give a greater bearing surface to the pistons of the large four- and six-cylinder motors and to eliminate piston slap, the pistons have been lengthened 1 inch to 5 inches and a new oiling feature has been incorporated. On each side and directly above the piston-pin bearing a slot has been made. Drilled diagonally in the center of this slot a hole runs through the boss and opens into the bearing. A relief groove is cut one-quarter around the circumference of the piston below the lowest ring. This scoops the oil on the cylinder wall and sends it to the slot, where it passes through the drilled hole to the piston-pin bearing. Thus little or no oil is wasted and smoking is nearly impossible, for excess oil is trapped and sent within the piston.

A new type of piston ring is found in the Buick motors. Three thin steel rings are placed in each of the three ring slots. These are of cold rolled steel,



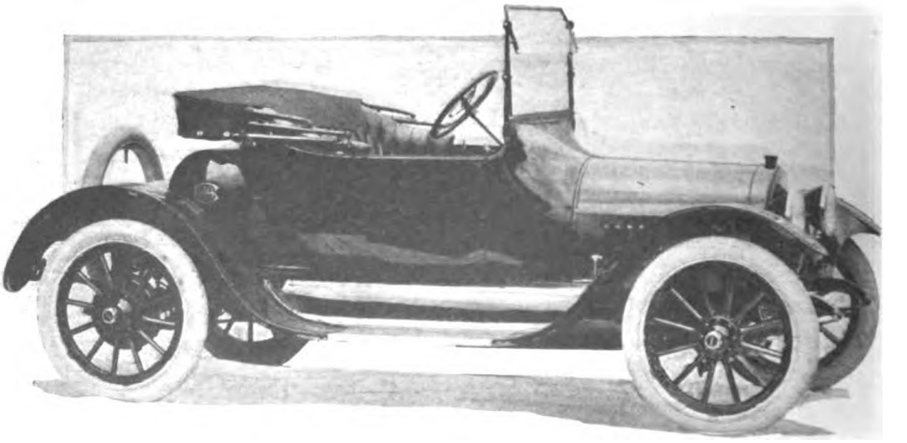
TYPICAL BUICK FRONT VIEW

which is coiled and then sawed into separate rings. These are said to run in quickly, to hold the compression extremely well and to take up wear. Tungsten steel valves replace nickel steel.

There is a change in the rear spring construction on the six-cylinder only. Cantilever springs replace the three-quarter elliptics used last season. These are pivoted at both ends and are 50 x 3, with eight leaves, the shortest on top in the usual way. The lower leaf is rolled up at its ends to form eyes for the spring bolts.

On the larger four and the six a new method of delivering the gasolene the carburetter is employed [illegible] gasolene tanks are st[illegible] Berear below the fr[illegible] it has been replaced [illegible] ac- the Webb Jay va[illegible] apparatus is m[illegible] the intake man[illegible] enough so that the f[illegible] m it to the carburetter by gravi[illegible] The device is really a method of a[illegible]omatically creating a vacuum within it, thus utilizing atmosphere pressure to send the fuel to it.

As for the mechanical features of the two larger models, there is practically no



SMALLEST BUICK ROADSTER, WHICH SELLS FOR $900

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difference except in the number of cylinders, the size of some of the parts, and the rear springing. Cylinders are cast in pairs and are 3.75 x 5. The S. A. E. ratings are 22.5 and 33.75, respectively. The intake and exhaust manifolds are on the left side, while the right is given over to the long push rods running up from the camshaft to the rocker arms operating the valves and to the Delco electrical unit and water pump. There has been no alteration of the valve mechanism.

The manifolding is peculiar in that the exhaust, with a separate opening into the header from each cylinder, runs above the intake, which has a common opening for each cylinder block. The exhaust manifold also departs from the conventional in that the connection to the exhaust pipe is at the front end instead of the rear. The Buick crankshaft for either four or six has three bearings, as has also the camshaft.

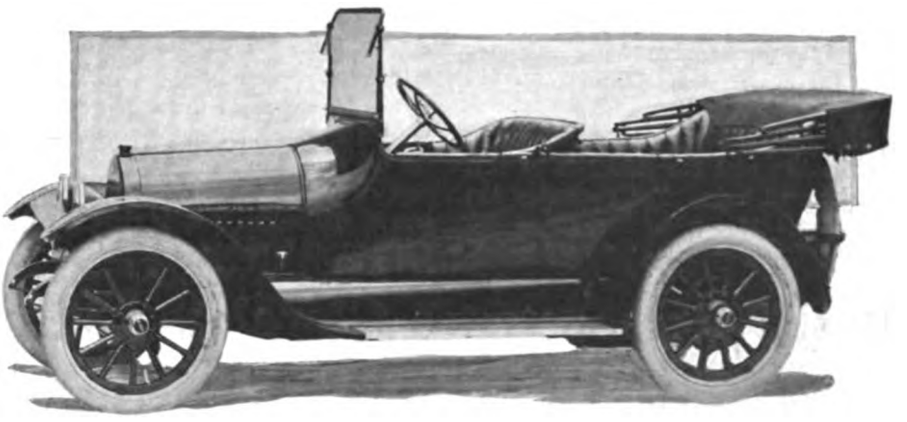
As to the oiling system, a constant level splash arrangement with the lubricant circulated by a gear-driven pump operated by bevel gearing from the rear end of the camshaft is used. A distributing pipe running along the inside of the crankcase supplies oil to the several splash troughs under the connecting rods, its feed being from the oil circulating pump.

The smaller four-cylinder chassis has a motor of the same overhead valve type, but its gearset is not in unit nor is the stroke as long, although the bore is the same as the others. The stroke is 3.75 inches. While the motor has the new steel rings, its pistons are not slotted as are the others, nor is the vacuum system of fuel feed incorporated. The carburetter gets its gasolene by gravity from the tank under the seat on the touring car and back of the seat on the roadster. Pistons have come in for ½ inch lengthening.

The combination of Delco cranking, lighting and ignition system is with the Buicks again, though much simplified. It is of the 6-volt single-wire type, with grounded return circuits. The ignition part on the large fours and the six is now fitted with an automatic spark advance in addition to the regular hand advance on the steering wheel. In the small cars the automatic spark advance feature is not used.

One special feature of note in connection with 1915 Buick wiring is the fact that all wires are completely enclosed within conduits, even the connections between any two wires being within small T or L insulators. Headlights are provided with dimmers, there being no side lights.

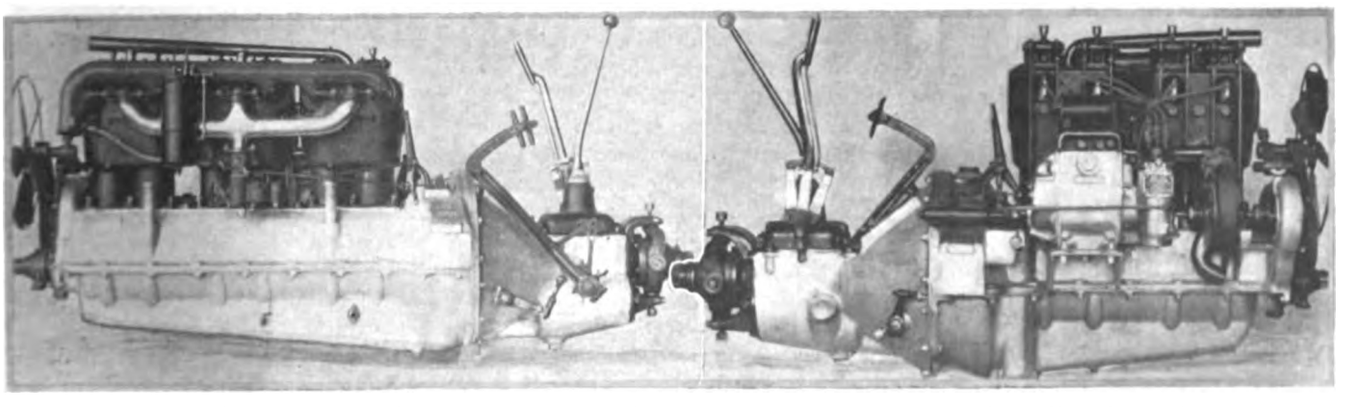
There is no difference in the drive or frame members of the chassis of any of the models over last year. The gearset



TOURING CAR ON LARGEST BUICK FOUR CHASSIS—PRICE $1,185

Models	Small four	Large four	Six
Price:			
Touring	$950	$1,185	$1,650
Roadster	900	1,235	....
Color:			
Touring	Black	Black	Black
Roadster	Maroon	Blue	....
Make of motor	Buick	Buick	Buick
Number of cylinders	4	4	6
Shape	Overhead valve	Overhead valve	Overhead valve
How cast	Pairs	Pairs	Pairs
Bore	3¾	3¾	3¾
Stroke	3¾	5	5
S. A. E. rating	22.5	22.5	33.75
Ignition	Delco	Delco	Delco
Carburetter	Marvel	Marvel	Marvel
Starting-lighting	Delco	Delco	Delco
Clutch	Cone	Cone	Cone
Wheelbase	106	112	130
Tires	32 x 3½	34 x 4	36 x 4½
Wheels	Wood	Wood	Wood
[illegible]	Left	Left	Left
[illegible]	Center	Center	Center
to g[illegible]	¾ floating	¾ floating	Full floating

do [illegible] ith cover and quick adjustable curtains, two-part rain-
has pa[illegible] g windshield, electric lighting and starting, tools,
[illegible] Speedometer on two larger models.



BUICK SIX AND FOUR UNIT POWER PLANTS, SHOWING CHARACTERISTIC OVERHEAD VALVE SYSTEM

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is substantially the same for all with the exceptions of necessary size increases with the bigger cars. Center control is used.

There is no change in wheelbase of any models with the exception of that of the small fours. The dimension has been made 106 inches instead of 105 inches. The other fours have 112 inches, while the six is still 130 inches from axle to axle.

Tires have been retained at 32 x 3½ inches for the small fours, 34 x 4 inches for the large fours, and 36 x 4½ inches for the six. Non-skids are fitted to the rear of all cars, the fronts being plain treads, while demountable rims are also standard, as formerly.

Bosch Demonstrates Glareless Light

Pierces Darkness of Jersey Roads for Benefit of Inspecting Party—Operates Scientifically.

In seeking to solve the illumination problem, the Bosch Magneto Co., New York, has attacked the matter in a manner differently from anyone else, and, as a direct result of the study that has been put into the design of the Bosch lamps, not only has very excellent illumination been obtained but the bad and very often dangerous effect of blinding glare has been reduced to a point where it is practically negligible.

In the course of a demonstration given for the benefit of a number of newspapermen by the Bosch company on some of the darkest of the dark New Jersey roads Wednesday night last, the perfection of the Bosch system in all of its details was clearly demonstrated.

Two cars, one carrying President Otto Heins of the Bosch company and a number of Bosch officials and another carrying the newspapermen, left the Bosch offices late Wednesday afternoon and traveled directly to the Villa Richard, where the Bosch company acted as host at dinner. Afterward the two cars were driven at varying speeds over the unlighted roads for more than two hours during which time an ample opportunity was afforded to judge of the quality and quantity of light produced by the Bosch system.

The most noticeable feature of the illumination produced is its similarity to daylight; this is due to the peculiar form of the filament, which lies in a vertical plane at right angles to the light beams and gives what is virtually a true flame effect.

The light is projected not in a thin pencil, but rather in an extended or diffused illumination. Although the pencil effect is lacking the penetration is all that could be desired. Small objects at least 500 yards ahead of the car were easily discernable. Another unusual feature of the illumination is that humps and bumps in the road lose the terrifying size they take on when shown up by a thin pencil of light; under the Bosch light they appear practically of their proper size.

Quite as important as penetration is the necessity for illumination at the sides, and in this respect the Bosch system is truly excellent. The sides of the road even at a considerable distance from the car are well illuminated, and even when traveling at speeds up to 50 miles an hour, cross-roads and turns became visible in plenty of time for the driver to control the car.

The excellence of the light produced by the Bosch system is due quite as much to the form of the reflectors as it is to the construction of the bulbs. These reflectors may be termed scientific modification of the parabolic type. As a result the illumination obtained is practically uniform. The difference between the light obtained with the Bosch flame-type bulbs and that with the ordinary bulb that is constructed to give a point source of light was made very plain by substituting the one type of bulb for the other. Hence it becomes apparent at once that the quality of the illumination depends upon neither the reflector alone nor the bulbs alone but rather upon the happy combination which the Bosch company has succeeded in working out.

British Court Upholds Price Fixing.

According to a decision of the House of Lords in England, an effectual stop has been put to the practice of price cutting. The decision was rendered in the case of the Dunlop Tire Co. against the Co-Operative Garage & Supply Co. The latter, which is a dealer, sold Dunlop tires under the list price and the Dunlop company carried the matter through the courts in an effort to establish its rights to maintain the price of its products.

According to the contract between the Dunlop company and its dealer, the dealer agreed not to sell tires at less than the catalog retail price. The House of Lords has decided that the Dunlop company has the right to designate the price at which its tires must be sold and ordered the defendant to pay $25 damages for every tire sold under the list prices.

SALE IS FOR BUYER'S BENEFIT NOT YOURS

He Does Not Buy Because You Want to Sell, Says Dickson.

George M. Dickson, general manager of the National Motor Vehicle Co., is credited with a bit of very valuable constructive criticism on selling cars. Dickson makes this suggestion because of his observations during recent visits to various cities where he watched salesmen trying to sell cars.

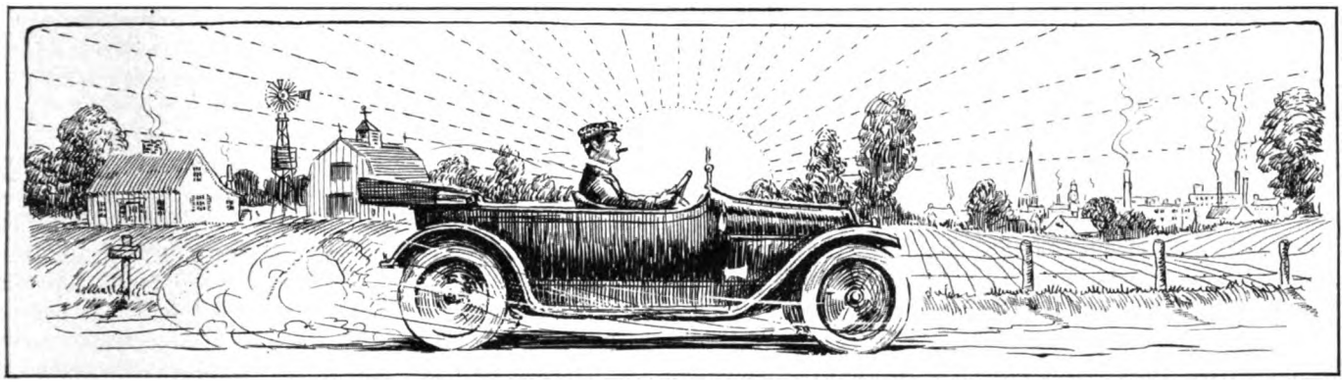
Dickson is in the habit of "dropping in" unexpectedly and often without the salesman knowing who is listening to his arguments. By this means he gets a true estimate of the methods the men are using in the field.

"One thing I have often noticed is that salesmen make the prospect very conscious of the fact that the salesman is trying to sell something," says Dickson. "There is no reason why the law of letting the customer buy should not apply to motor cars as well as elsewhere.

"The best written and printed advertisement is the one that has a message to the reader and does not make the reader conscious that somebody is merely trying to get his money. If the advertisement makes such a strong appeal and so convinces the reader that he wants the particular article which is advertised, the reader will then buy it. Of course, the advertisement played its important part in the transactian, but the reader was not conscious of it.

"Likewise in talking-advertisements or salesmen-words. Give the buyer the full benefit of what the car means to him, not what the sale means to you. He does not care how many cars you sell; what he is interested in is what he, the buyer, is going to get in his machine and in the pleasure and service from the car."

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Study Competing Cars as Well as Your Own

Knowing the Excellence of a Rival Better Enables Competing With Him—Reilly Explains His Method.

By Ray W. Sherman

Reilly floated down a long shady street in Sayanna in the early morning. It was one of those mornings when the man who got up early is glad he did so and the man who didn't get up has one of the best overtime snoozes of his life.

Reilly had started for the factory just as Mr. Sun was getting Mr. World's signature to the contract whereby Mr. World agreed to trade in a used Night for a new Day. To Reilly and the others who got up in time to see the signing of the contract it looked like a good business deal all around.

Sleepy-eyed bartenders were yawningly opening doors in Midtown when the lone traveler passed through, and as he drifted down the street to the Sennett Motor Car Co.'s factory in Sayanna he was obliged to drive even more slowly because of the throng of office men and women who were making their usual sprint from ham and eggs to their desks.

Thought He'd Been There All Night.

The office was still in the buzz of settling down to business when the Callawassa dealer sauntered down the aisle and beat the Sales Manager into that dignitary's office by about a half-minute.

"Been here all night?" demanded the Sales Manager as he found Reilly in possession and with the appearance of having been there for hours and hours. He looked like a fixture—a hat rack or something of that sort, something that had always been there.

"No, not all night," smiled Reilly. "I guess I got an early start, though. You know we Callawassa boys get up earlier than you Sayanna gentlemen." Reilly crumpled and uncrumpled his Panama and smoothed his few long remaining hairs back into place. The morning breeze through the window certainly was annoying.

Reilly Invited to Sales Conference.

"I'm glad you're here. You haven't been down in a long time," said the Sales manager, as he put his hat on a peg and unlocked his desk. "You're just in time for a sales meeting. One's due first thing this morning. The Old Man will be glad to see you. He was asking about you the other day. He said he would like to see that old leather-face of yours once more before he died."

"Did he?"

Reilly wrinkled the "leather-face" into a rippling smile.

"Let's go in. No, wait! Hello!!" The sales manager answered the telephone. "Yes, he's here." And to Reilly, "Your office wants you. Come down to the Old Man's big office when you get through." He handed the instrument to Reilly and departed, bearing under his arm one of those formidable looking black leather portfolios, which may contain world revolutionizing papers or mere piffle, but which look as if they contained the former.

Preaching the Gospel of Sennett.

"Well, Well! Glad to see you!" exclaimed the Old Man as Reilly walked into the conference a few minutes later. "We're sure glad to have you in with us." Everybody shook hands with Reilly and those new salesmen who didn't know him soon knew him.

The conferees, the Sales Manager presiding, had in hand this morning the new 1915 Sennett cars. They were getting a line on the new stuff preparatory to spreading the Gospel of Sennett abroad over the land. The Sales Manager advanced information, the Chief Engineer went into the technical end of things, and everybody asked questions and made the session a regular free-for-all.

"We Can't Be Too Enthusiastic!"

"We can't get too much dope on this or we can't be too enthusiastic!" asserted the Sales Manager. "The new line is good stuff! It's the best stuff we ever had! It's got selling points that stick out like a porcupine's quills, and if they once get into a prospect's hide they ought to stick just like those same quills.

"Everybody's new stuff is coming out now," he continued. "The season is just beginning. Our competitors have got the stuff, too, but there's nothing this year that's got anything on the Sennett! And we've got to believe it if we're going to make anyone else believe it! Don't worry about what the Colt and the Kane and the Congress have got! Forget that and get your thoughts on what we've got!"

"In that connection——" Reilly hitched around in his chair and began to speak slowly and convincingly. "In that connection I might mention that we go quite thoroughly into this matter in our little conferences in our salesrooms down

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in Callawassa. We have 'em, you know, even if we don't have but three conferees." Reilly spread a smile around and drew one in answer.

"We pay particular attention to what our competitors are doing. The sales manager is quite right when he advises us not to worry about what the Colt and the Kane and the Congress are doing, but to get our thoughts on what the Sennett has got. That's good dope! We certainly do not go contrary to this in our methods, but we have adopted a variation that I believe can be made valuable by every factory sales organization and by every dealer and salesman in the business."

"Well, out with it!" demanded the sales manager.

Not at Variance With Regular Plan.

"Yes, what is it?" chorused a half-dozen.

"Don't keep us in suspense," pleaded the Old Man.

"I'll get to it! I'll get to it!" explained Reilly. "I merely want to make it plain to everyone before I begin that we are not at variance with your methods. We don't worry about our competitors. What we do is work hard to find how to make our competitors worry. Now——" Reilly picked up a Motor World from the table. "Now, this is what we do." He opened it to the description of the new 1915 Congress cars.

"The Congress, of course," he went on, "is one of our greatest competitors, in price, in value, in size, in power, in everything. When a man goes out to buy a medium-priced car a question uppermost in his mind is Congress or Sennett. The Congress has some selling points which we have not and we have some which are lacking in the Congress. The buyer must balance all these things in his mind before he buys.

Study New Cars in Trade Papers.

"Here's what we do in this particular case. We held a conference the other morning, right after this Motor World came in. We all went over this description of the Congress with a fine-toothed comb. We picked it to pieces piece by piece and part by part. We dug out every point of excellence in the Congress and lined them all up on paper. We built as fine a list of selling points as we could. We studied the car better, I'll bet, than some Congress dealers and salesmen ever studied it.

"Of course, we had this advantage, that the description had brought out the main points and few points of detail were omitted. Then after we had compiled our list we went over it and checked it off with our selling points. For instance, the Congress claims easy riding because it has a three-point or platform spring suspension at the rear. That's one of their main selling points, and whenever a Congress salesman gets up against a prospect he brings this out at some point in the conversation.

Try to Overcome Features of Rivals.

"Our problem is to find how to overcome this Congress feature. We can't come right out and tell the prospect that we ride just as easy as the Congress; that's knocking, and it's poor business. But what we do do is this: We have cantilever springs, which, to my mind, are just as easy riding as the Congress construction. So when we get hold of a prospect we don't let him get away without knowing that our cantilever springs make a wonderfully easy riding car.

"The Congress advertises 46 horsepower. We may be able to deliver that but we don't claim it. To overcome this selling point we point to our little, high-speed motor and lay great emphasis on what the small, high-speed motors have done in recent races. We play up the motor strong. We can't offset the Congress 46 horsepower by claiming just as much, but we do make it strong that our motor will go anywhere and do anything that any man can ask of it in touring, on hills, or in speed. If the motor will do all a man can ask of it, it is going to satisfy him.

Go Over Competitors Very Carefully.

"In this way we go through the Congress car point by point and try to find out whether they have any point for which we have not a competing point. If we regard them as a little stronger in some one point we plan as strong an argument as we can to meet that point.

"Then——" Reilly gave another hitch in his chair and got his index finger working. "Then, if we find a man has been nosing around the Congress or is inclined to favor the Congress, we give him what we call our Congress argument, but we never mention the Congress name. In this we play up strongly those points which offset the Congress advantages. Of course, we by no means neglect our own good selling points. We merely give him our selling story with variations designed to offset his hankering for a Congress."

"And you have a Colt argument and a Kane argument and a——" began the Old Man.

"That's the idea!" replied Reilly. "We have our own good argument for the car itself, and then we have a separate line of argument which we give to any prospect who we know has been investigating some other particular car. If we don't know that he is considering some other car or can't find that out, we give him our own argument in the form which we consider is best suited to the individual prospect. It is not always that we can learn whether the prospect has got some competing car on the brain, but if we do learn it we let that be a guide to us in our work upon him."

"That's about the cleverest way to knock and at the same time not knock that I ever heard of," asserted Tom Meck, one of the Western managers.

"That isn't knocking!" came back the Old Man.

Just Ordinary Use of Intelligence.

"No, it's just plain use of brains," said the Sales Manager.

"No wonder you never did it then!" It was another Western man who spoke and Meck glared at him. He had no comeback.

Before he could gather his wits for the comeback a New England man tapped gently on Meck's brow.

"Nobody home! Nobody home!" chided the New Englander.

"Nobody ever lived there; it's haunted," added the Westerner.

Good Salesman Can Sell Any Car.

C. T. Silver, of the C. T. Silver Motor Co., New York distributers of the Overland and the Peerless cars, stated at the time the Peerless was taken on that, in his judgment, both makes of cars could be sold by the same staff of salesmen.

He now feels that his opinion has been sustained, because since rebuilding his sales force he finds that the salesman who is restricted in his selling ability to one make of car is not a salesman but rather an order taker, while the real car salesman can handle several grades of cars and do so successfully in spite of the difference.

It was his conclusion in the matter of his sales force that led him to look around for a different class of men. In making his new selections he determined that as a starting point he would confine his selections to men with a minimum earning capacity of $5,000.

With substantially the same number of men now on his sales force as he had at the time the Peerless line was taken he is increasing his sales of Overlands and is making a creditable and satisfactory showing with the Peerless.

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Dealer's Legal Status

Shop Record Books and Cards Invaluable if Dealer or Garageman Is Ever Compelled to Sue on a Repair Bill—Workman Must Indentify Shop Cards.

By Geo. F. Kaiser

How many times have you wondered what the law is on a certain point? How many times have you been in doubt as to whether you were right in certain acts; or on the safe side? Any uncertainties will be explained on this page. Ask George F. Kaiser, Motor World.

Every dealer should have some good system whereby the hours of labor and the items of materials put in on each job may be recorded. Not only will such a system facilitate making out bills, settling disputes as to the correctness of charges, and obviate much possible dissatisfaction on the part of its customers, but it will also be of real value to him at some time when it becomes necessary to start suit in court for the amount claimed on the job, when the customer disputes the number of hours charged to him or contends that he did not receive all the materials contained in his bill.

The question may arise at almost any time as to whether or not these things are properly charged. The dealer in the majority of cases will have no personal knowledge of the transactions and will have to depend entirely on what he learns about them from his employes. Of course, when the case is reached for trial in court the employes may be subpoenaed; that is, if they have not died or moved away to some place unknown in the meantime. When either of these two things happens the dealer is up a tree, and if he has only their testimony to depend on, he must necessarily lose his case.

Books Might Be Used as Evidence.

At a time like this a dealer will fully realize the importance of keeping proper written records. If a book had been provided in which it was customary to make entries in the ordinary course of business, and the dealer's employes had made such entries within a reasonable time after the items of work were done, the books might properly be introduced in evidence to prove the dealer's claim, notwithstanding the fact that the employes who made them could not be produced upon the trial.

Even if they were not immediately entered in the books, but were first written out on a slate or on a piece of paper, and thereafter transferred to the book —within a reasonable time, of course, such as a day or two—they might still help the dealer out of his difficulty.

In a number of states, as in New York state, if a man keeps no bookkeeper or clerk, he may make entries himself which will be considered good evidence in a trial. A dealer to do this, however, must be able to say that he kept no clerk; that the books were regular books of account and they were regular dealings between himself and his customer; that is, that there was more than a single charge; that some article was delivered or some service was rendered, and that in the past other persons had settled their accounts by his books and that they found them to be correct.

It may be a little complicated to be compelled to show all these things before the books will be received, but it is only just to allow the customer some safeguard against possible dishonesty.

Man Who Made Entries Must Identify.

Although the word "books" is used here, it is generally understood that cards, time slips, etc., will be just as well when the regular shop books cannot be produced for some good reason.

In the State of Texas, in the case of Mandle vs. Barden, 164 S. W. (Texas) 1036, a repair man sued to recover the sum of $445.39 which he claimed was due him for supplies and repairs to a motor car. He recovered that amount on the trial of his case, but his customer appealed and the higher court said that it should not have been allowed to him, as the correctness of an account for supplies and labor cannot be proved by a witness who himself does not make the entries, if he has no personal knowledge of them.

The court further said that a superintendent of a repair-shop cannot prove the time slips of his employes, even though the man under him made them out and signed and delivered them to him, and even though he received them and took them to the office, but that the time slips of mechanics can only be admitted in court when they themselves appear and testify that they are correct, when the shop books or the bookkeeper cannot be reached.

The court stated that if the foreman had had any personal knowledge of the items and the time of labor contained in the time slips, or if he had signed the slips himself, then they could have been put in evidence.

Neglect in the keeping of shop books in this case caused the repair man to lose the judgment to which he was otherwise entitled.

Ship-builders Keep Detailed Records.

In Massachusetts recently, in the case of Matson Navigation Co. vs. United States Engineering Works, 213 Fed. 293, a glimpse was given into the way shipbuilding and repair works keep track of labor and materials expended on each particular job and the system followed in doing so. It appeared that in order to keep track of the work and material expended on each job, each job was numbered and each workman turned in daily to his foreman a time card showing the length of time he had worked on the certain numbered job and the kind of work he had done, which card was then checked by the foreman.

Orders and material cards which the foreman issued and on which requisitions material was advanced from the storeroom also contained the number of the job. From these cards and orders daily sheets relating to each job were prepared and the items were charged therefrom on the books.

Workmen Testified from the Cards.

It was held in this case when the shipbuilders sued that such time and material cards when identified by the workman who made them or the foreman who checked them might be properly admitted in evidence as also might the daily sheets which had been submitted to and approved by the timekeeper on the job, even though neither the foreman nor the man were able to testify in the trial from independent recollection, not being able to remember the materials or the number of hours put in on any certain job.

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WIDE-AWAKE MERCHANDISING

FITTED UP "CLOSING ROOM" TO HELP PROSPECT SIGN UP

Detroit Dealers Provide a Noise-free, Quiet Nook Where There Is Nothing to Distract Prospect's Attention—Sales Data Handy and Atmosphere Ideal.

Bemb and Robinson, of the Bemb-Robinson Co., Detroit, who are constantly on the alert for new and better ideas in the merchandising of motor cars, have adopted or inaugurated a feature that will be of interest to a great many dealers, especially to those who have developed the merchandising idea to the point where it is recognized that the salesroom is more than a show place for cars.

Invites Buyer In to Close the Sale.

This innovation is the fitting up of a small room off the main salesroom into what is called a "closing room." A picture of it appears on the next page.

Every salesman recognizes the fact that there is always a certain point in making a sale that can technically be designated as the closing point. It is at this point that customers will be invited into the Bemb-Robinson "closing room."

"The main idea of our 'closing room' is privacy for our customers," says Walter Bemb. "We are located on a busy street. When talking to a possible customer we have often noticed that just as he was getting worked up to a point where we might reasonably expect to get his name on the lower right-hand corner of the contract a fire engine would go by, a street car stop and some acquaintance get out, or something would happen that would stop the train of action.

"Our plan now is to invite Mr. Prospect at this point into this little room. The dominating note of the room is comfort. There are no pictures on the walls and the glaring light is kept out by these dark green silk curtains. Here we have a soft light from a shaded lamp, easy chairs, where a man can be really comfortable—a box of cigars or cigarettes handy—but more important than that, we have every bit of information that a salesman could possibly want at hand to satisfy the most exacting customer.

"A book of photographs shows every detail of the cars. If any questions are asked in regard to construction the illustrations and specifications are at hand. Does he want to know about delivery dates? The schedule is right here. About oversize tires? Here is the list that tells all. Does he want a blank check? We have checks on practically every bank in Detroit and some from towns in the state.

Everything Is Quiet and Secluded.

"In other words, there is everything including quiet and seclusion to enable a man to do business and absolutely nothing to prevent business being done. No interruptions, telephone calls, friends. When a man comes here to buy a motor car we want to make it as easy for him to buy a motor car as we possibly can. This is one way that we make it easier."

The "closing room" is furnished with a mission double arm-chair with comfortable Spanish leather seat and cushions, an old English fireside chair, a rocker, a straight arm-chair and a neat mission table, in addition to the record files. Floors are neatly covered with rugs, and the room looks as it is intended to look—a quiet, comfortable, secluded place to transact important business.

IN THAT BETWEEN-SEASONS DULL TIME BEGIN PLANNING FOR THE NEW SEASON

Buick Branches Do Good Work With Scare-head Signs.

Suppose you are all sold out—haven't got a 1914 model left and will not have a 1915 for a week or so, is that any reason why your salesroom and show-window shouldn't be working for you?

Some dealers think it is. To go into their salesrooms and gaze at the vast area of emptiness is like going into the room of the dear departed just after the corpse has been taken out and before things have been straightened out. It makes one feel lonely and miserable.

Others who have the merchandising sense regard it as an opportunity. The Detroit and other branches of the Buick Motor Co. are in this class.

For weeks their front windows have been covered with canvas signs, stating that the 1914 product has been sold out and urging prospective buyers to wait for the 1915 model before buying. What's the result? Many people have come into the branch and requested the branch to notify them when the new cars arrive.

Thus, instead of dull, uninteresting store front that seemed inevitable, they have aroused the liveliest kind of curiosity and interest by use of a cheap canvas sign. The statement that they are "sold out" is of itself sufficient to challenge attention.

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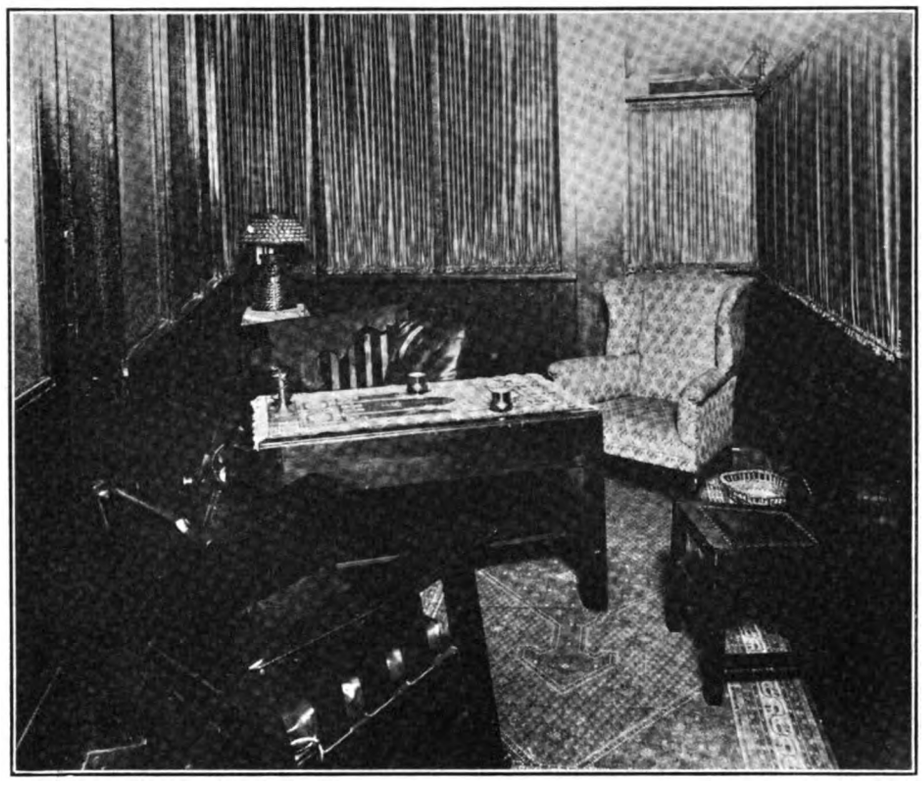
GET AND KEEP THE CUSTOMER

It Costs a Little Money But It's Worth It.

"We don't argue with customers, we accommodate them," said a very prosperous dealer.

"We go out of our way to do things for them. It costs us money, of course. But we spend money to get customers and why shouldn't we spend money to keep them? Some dealers don't agree with me apparently. They think once a customer has been given all the initial attention that is the end of it. That is not my view.

"To illustrate the force of my position I want to recite a recent incident. One of my customers went out to lunch with me the other day. He had just given me the order for his new car.



BEMB-ROBINSON'S "CLOSING ROOM"—IN UNDISTURBED QUIETNESS THE PROSPECT IS MADE TO CONCENTRATE ON BUYING A CAR

Customer Insisted on Buying Lunch.

"At the conclusion of the meal he said, 'I want to pay for this lunch.' I demurred and asked the waiter to bring me the check. 'Look here,' said my customer, 'I would appreciate it if you would let me pay the check; you have settled for my lunch at other times. I really want the honor of paying for this.' Of course it would have been impolite for me to refuse.

"When the waiter had departed, my customer turned to me and said in his bluff sort of say, 'Blank, I'm going to tell you a secret. As you know, dozens of salesmen from competing concerns have been after my order. Many of them are fine fellows. Most of them represented good cars. Perhaps I may have liked some of the cars a trifle better on some points than I do yours. But I've given you my order and I'm glad to have done it.

"And do you really want to know why? It's first, last and all the time because of the way you have taken care of me in the past. Others may talk car and talk service; you have never talked much about your **service,** but it has always been there.

"'I would rather trust myself in your hands with a car not quite so good mechanically if need be, than with some others even if their car was better.'"

TWO DETROIT MEN GATHER IN THE SUMMER DOLLARS WITH A SMALL INVESTMENT

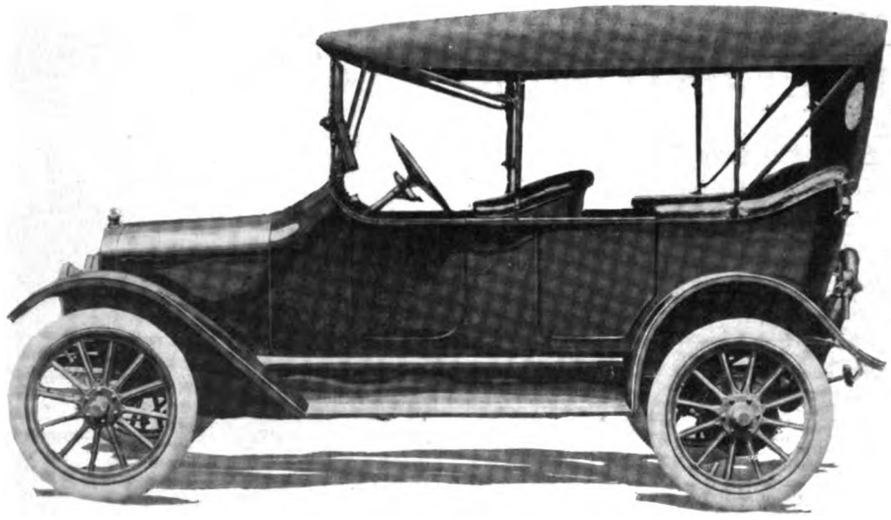


M. S. HOFF AND J. F. IRVINE HAVE OPENED A CAR "LAUNDRY" IN DETROIT AT 833 WOODWARD AVENUE—THEY CHARGE $1.50 FOR WASHING, POLISHING AND CLEANING A CAR—THE BUILDING AND EQUIPMENT COST LITTLE

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FRONT, SHOWING TAPERING LINES



MAXWELL FOR 1915, SELLING FOR $750 WITH FULL ELECTRIC EQUIPMENT

Improved Maxwell at Former Price

Electric Lighting and Starting System Included in Regular Equipment—Cabriolet Added to Body List—Springing, Cooling and Carburation Systems Improved.

Not many changes have been made by the Maxwell Motor Co., Inc., Detroit, in bringing its car up to the 1915 standard, and none of the changes are of radical nature. The car has been made more complete by the addition of the Gray & Davis electric starting and lighting system, though no increase of price has followed this improvement, the prices remaining the same as in 1914—$750—when no electric lighting and starting equipment was offered. If the car is wanted without the cranking and illuminating plant it may be had at a reduction of $55. In other words, the car may be bought with last year's equipment at $55 less than last year's price.

In addition to the touring, roadster and coupe bodies offered last season, a cabriolet may be had on the same chassis.

The prices, with electric lighting and starting, are $750 for the touring car, $725 for the roadster, $975 for the town car and $895 for the cabriolet. Regular equipment includes, besides the Gray & Davis system, top with cover and side curtains, two-piece windshield of new design, pump, jack, tools, etc. When electrical equipment is not fitted the cars have Prest-O-Lite headlights and oil side and tail lights.

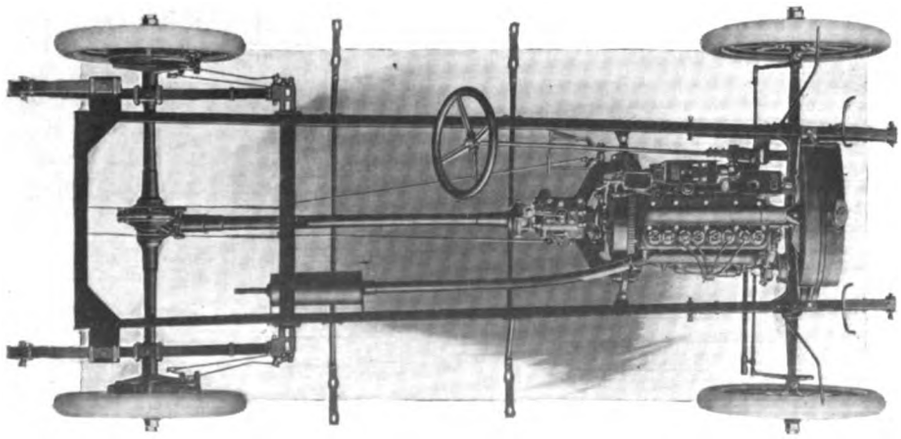
When the Gray & Davis cranking motor and generator are supplied they are carried on brackets on the left side of the upper half of the crankcase; the brackets are cast integral with the case.

CHARACTERISTIC FEATURES OF 1915 MAXWELL.

Price:	
Touring	$750
Roadster	725
Town car	975
Cabriolet	895
Power plant	Unit type
Number of cylinders	4
Shape	L-head
How cast	Block
Bore	3⅝
Stroke	4½
S. A. E. rating	20.25
Magneto	Simms dual
Carburetter	Kingston
Starting-lighting	Gray & Davis
Clutch	Cone
Gearset	3-speed
Wheelbase	103
Wheels	Wood
Tires	30 x 3½
Steering	Left
Control	Center
Type of rear axle	¾ floating

Options: Without electric lighting and starting, $55 less.

Equipment: Top with cover and side curtains, two-piece windshield, electric lighting and starting system or Prest-O-Lite, tools, pump, jack, horn, etc.



CHASSIS WITH TAPERED FRAME AND NEW SPRING SUSPENSION SYSTEM

The generator is placed ahead of the motor so as to be in line with the fan pulley, from which it is driven by belt. Thus the same belt runs the fan and the generator in triangular fashion. The pulley diameters gives the generator a speed of 2¼ times that of the crankshaft, and it charges the battery at full rate when the car is running from 12 to 15 miles an hour.

The cranking motor, which has the power to spin the engine at the rate of 130 revolutions a minute, drives to a ring gear fixed to the rim of the flywheel. The gear train between the electric motor and the flywheel gives a reduction of 30 to 1. Pressure by foot on a plunger starts the electric motor and engages

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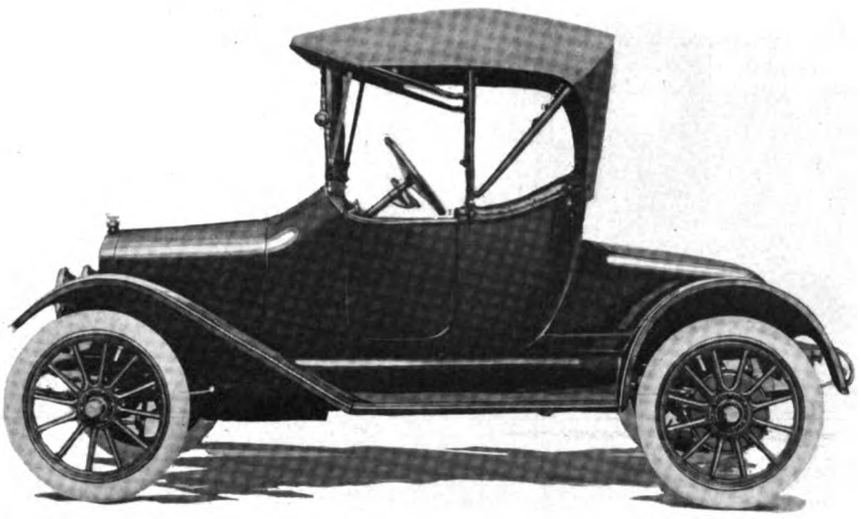
the starter pinion with the gear on the rim of the flywheel.

In connection with the electric system a Pumpelly storage battery of 80 ampere-hours capacity is used. There are no side lights with the electrically-equipped Maxwell. The 9-inch headlamps are fitted with a dimming coil in the switch, which serves to reduce the light for city driving.

Prominent among the changes made is the replacement of the former semi-elliptic rear springs with three-quarter elliptics with scroll ends. Another change is the shifting of the carburetter from the left side of the engine to the right. In the older motor, although the valves were on the right, the fuel went through a passage cored in the cylinder casting to that side. This change was made principally to make room on the left side for the cranking and lighting units, when they are specified, but it has the advantage of making a shorter passage for the gases. In its new location the carburetter, which is this year a Kingston, atomizer-type, is just back of the magneto and is very accessible, being higher up than on the old engine on account of the higher position of the fuel tank in the cowl.

Another new feature is the radiator construction. The radiator shell, which is rigidly fastened to the frame, is entirely independent of the core which carries the cooling water tubes. Thus the delicate part of the radiator, though securely held in place, does not receive all the frame weaving strains which the shell does and the possibilities of springing leaks and damaging the tubes are reduced to the minimum. Replacement of the core is also made considerably cheaper and easier.

Although drive is still on the left and the control in the center, a new type of steering post, which fastens by a bracket to the cowl board for rigidity, is used. Instead of locating the spark and throttle levers on opposite sides of the steering column, they are mounted on a quadrant below the wheel, as was the lever control of last year. An added refinement is the placing of the horn button on one end of the quadrant.



1915 ROADSTER WITH STREAMLINE BODY, COSTING, FULLY EQUIPPED, $725

The Maxwell motor is practically as it was except for the carburetter shifting and the provision for mounting the electrical units. The cylinders are cast in a block with the cylinder head detachable. The three point suspension of the unit power plant is retained. Although the flywheel is unenclosed, the gearbox is made a part of the unit by a yoke which passes around the flywheel and bolts at either side to the crankcase supporting arms. The cylinders are 3⅝ x 4½, giving a S. A. E. rating of 20.2 horsepower.

The crankshaft has two main bearings, and it as well as the camshaft and connecting rods are of manganese steel, which is very rigid. Timing gears, housed at the front, are of nickel steel and all working parts are as light as is consistent with the work they have to do.

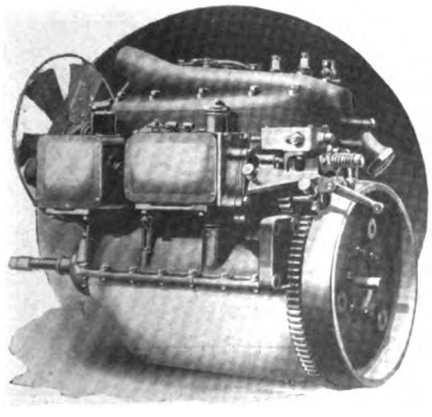
The lower half of the crankcase carries the oil reservoir used in connection with the conventional type of splash lubrication system. A plunger pump, located in the timing gearcase, and operated by an eccentric on the camshaft, pumps the oil from the reservoir to the four splash troughs under the connecting rods. After the oil has been splashed up to the various bearing surfaces by the rod ends, it finds its way back to the reservoir through a drain at the rear of the case and after being filtered is recirculated.

Cooling is by the thermo syphon system, which works efficiently on motors of this size. A Simms dual type high tention magneto, driven by shaft on the right side of the engine, gives the ignition current. It may be locked from the dash.

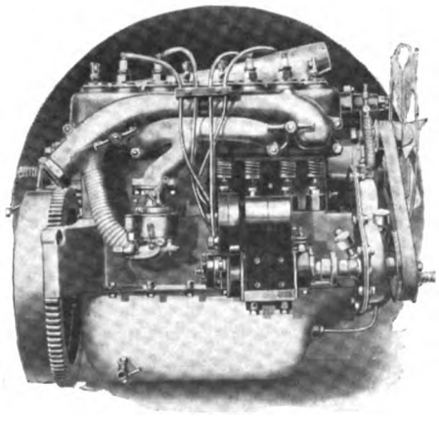
The clutch is a cone with asbestos facing; the cone is a steel stamping. The gearset is unaltered and affords the usual three forward speeds. Gears are nickel steel, and a Hyatt bearing in connection with a bronze bushing is used at the front end of the main shaft, while the rear end is carried on a babbitt-lined bearing. Phosphor bronze bushings are used on the jackshaft. The propeller shaft is enclosed in a torsion tube with one universal joint at the front end. There are no radius rods, the torsion tube taking both the drive and torque stresses.

The rear axle is three-quarter floating, with the springs mounted above it. Brakes are of the usual contracting and expanding type, acting on rear wheel drums. Wheels are of wood with clincher rims and 30 x 3½ tires are fitted all around.

To insure good body support, the frame is tapered from 33 7/16 inches at the rear to 28 inches at the front, and has three cross-members.

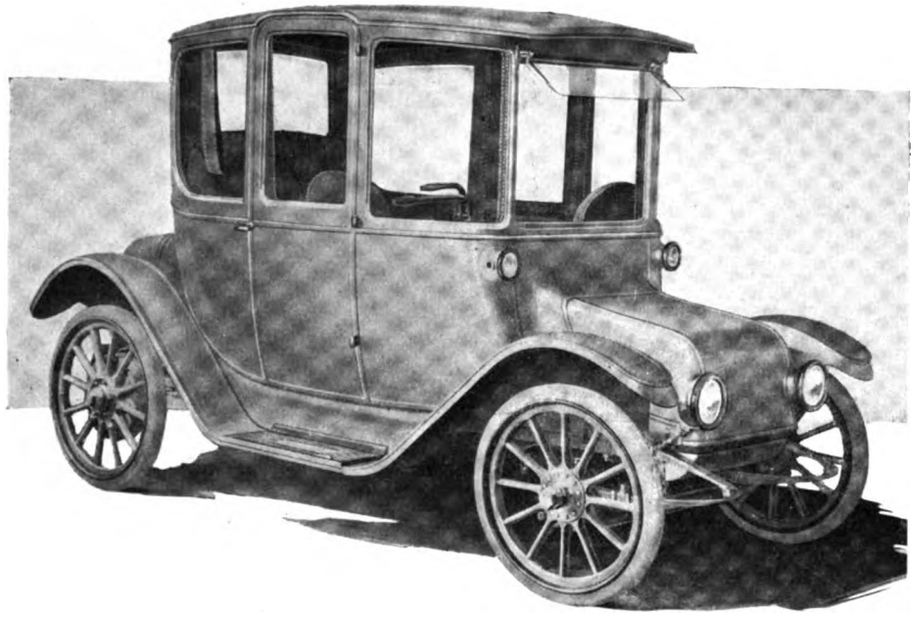


MOTOR AND STARTING-LIGHTING UNITS



CARBURETTER AND VALVE SIDE OF MOTOR

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WOODS BROUGHAM WITH NEW BODY AND UNDERHUNG WORM DRIVE

SELLING FEATURES OF THE NEW WOODS ELECTRICS

Prices, Broughams:
5-pass. dual control.....$3250
5-pass. front or rear control 3150
4-pass. rear control..... 2875
3-pass. roadster 2300

Drive:
Broughams .....Worm
..Roadster .....Bevel
Battery.....42 cells, 11 plates
Speeds.....5 forward and reverse

Wheelbase:
5-pass. broughams 116
4-pass. brougham 100
Roadster 92

Tires:
Front .....34 x 4
Rear .....38 x 4½
Steering .....Lever

Equipment: Electric lights, horn, ampere-hour meter, clock, speedometer, tools, etc.

Woods Electrics Have Worm Drive

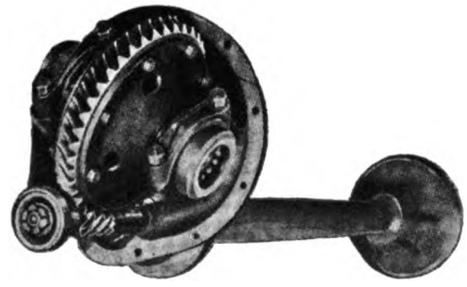
Line Now Includes a Dual Control Brougham — Chassis Completely Redesigned, Battery Capacity Increased, Bodies Improved and Prices Slightly Increased.

A car with a dual control system is included for the first time in the line of electric vehicles turned out by the Woods Motor Vehicle Co., Chicago, Ill. At the same time, the single chassis, made in several lengths, upon which the five bodies comprising the line are mounted, has been redesigned, and now has inverted U-shaped frames, a new spring system, underhung worm drive in place of bevel gears, new motor support and new braking system; and a slight increase has been made in prices.

The new prices are as follows: Five-passenger brougham with dual control, $3,250; 5-passenger brougham with either front or rear drive, $3,150; 4-passenger rear drive brougham, $2,875, and the 3-passenger roadster, $2,300.

The new Woods electrics are Model 1501, which has dual drive; Model 1503, with front drive, and Model 1504, with rear drive; all of these are 5-passenger broughams, while the two remaining cars are a 4-passenger brougham with rear drive and a 3-passenger roadster. The roadster is the only car of the line which uses bevel rear drive. All have lever steer.

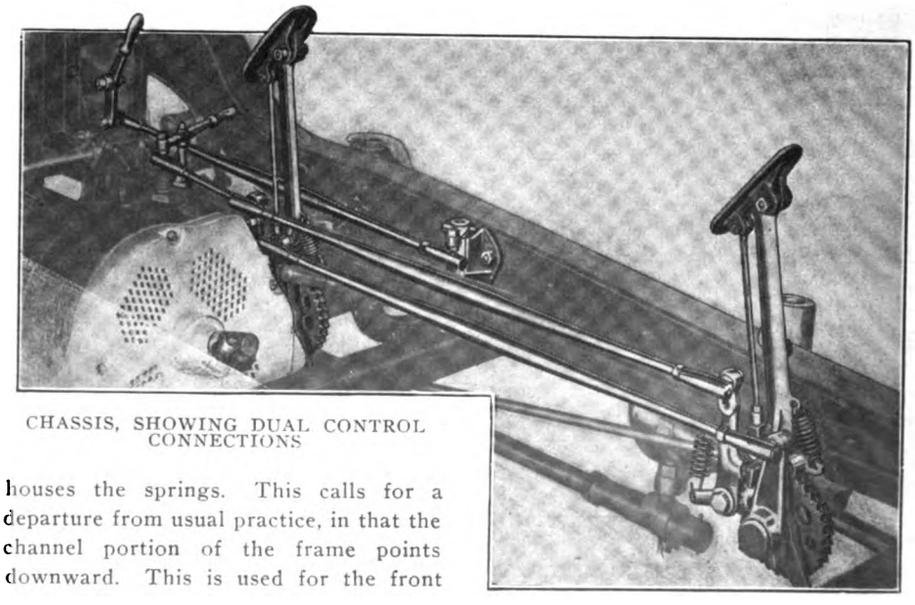
One of the features of the construction is the spring suspension, in which an inverted U-shaped frame channel houses the springs. This calls for a departure from usual practice, in that the channel portion of the frame points downward. This is used for the front springs which are elliptic as well as the elliptic rear. In the front this saves almost 6 inches across, allowing the car to have a turning radius of 34 feet. In the rear it permits of using a wider body. The springs are merely set in the frame channel and two spring clips fastened around the frame. In the previous Woods construction the conventional springing was used and in the front the springs were of the three-quarters elliptic type.



WORM DRIVE AND SHAFT HOUSING

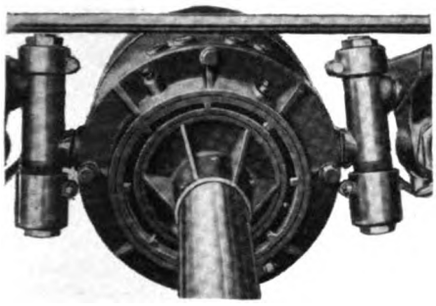
Aside from the springing, a very important and effective construction is the means of propulsion. The rear springs are fastened to torque members instead of the rear axle housing. The drive is taken through these torque members instead of the springs. Because of this system the rear axle housing is relieved of much strain.

Improvements have been numerous



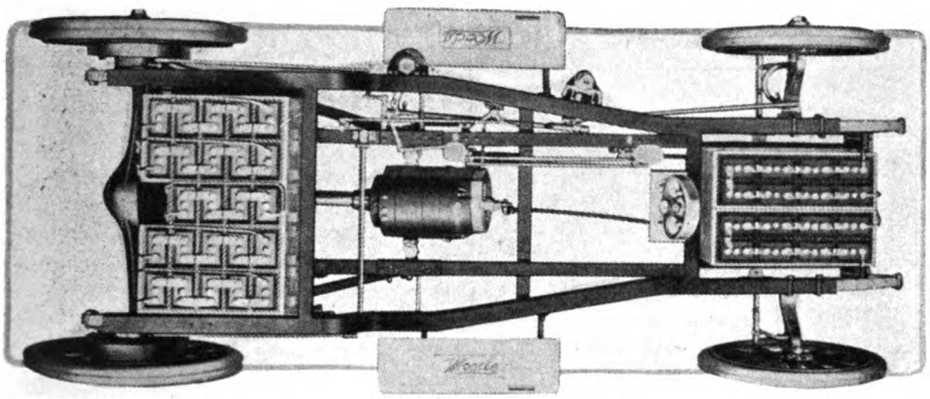
CHASSIS, SHOWING DUAL CONTROL CONNECTIONS

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FLEXIBLE MOTOR SUSPENSION

about the motor and the drive. Previously a reduction was made between motor and rear axle by herringbone gears, but this has been supplanted by a straight direct drive from motor to rear axle, making for considerably more efficiency. The motor is suspended upon ball joints, considered better than the brass-bushing method used on the 1914 models. The motor and supports rest upon a sub-frame attached to cross members and the sub-frame acts as a housing for one end of each torque member, as shown in an illustration herewith.



PLAN VIEW OF CHASSIS, SHOWING DISTRIBUTION OF BATTERY

All Woods electrics, with the exception of the roadster, are now equipped with a worm-drive rear axle with the worm wheel on top and the driving worm on the bottom. The housing into which this unit fits shows a smooth surface at the rear and there is a slight bulge to provide for the worm gear.

The brakes have been redesigned and the bands increased in size from 14 x 1¾ inches to 16 inches diameter by 2 inches wide. The cross-members of the frame are welded to the inverted U main frame. Rivets are used as an additional means of securing the parts.

The battery set is larger than used heretofore, the 1915 cars coming through with 42-cell, 13-plate batteries, while the previous models had 40-cell, 11-plates.

All cars have five forward and five reverse speeds, are equipped with 34 x 4-inch tires in front and 38 x 4½-inch in the rear. The 5-passenger broughams have a 110-inch wheelbase, the 4-passenger 100-inch and the roadster 92-inch.

The front and rear drive car is a leader. The ampere-hour meter, ammeter, speedometer and clock are fitted into a neat-appearing box placed angularly on the floor, forward, so as to be in plain view of the driver. The rear seat is amply wide for three persons and the driver's seat is forward 5 inches to give greater freedom in controlling the car. The two front chairs, one of which is the driver's, are of the revolving type.

The dual-control model may be driven from either the front or the rear and the rear mechanism is inoperative when the front set is in use. Should the front foot brake be set and the driver wish to start from the rear, the brake is released the moment the controller is brought into action. The same applies if the rear brake is set and the driver wishes to use the front set. The controller handle, when pushed back from neutral position sets a brake on the motor armature shaft. This is equivalent to an ordinary service brake, while the emergency brake is operated by pedal.

The other two 5-passenger broughams have the same seating arrangement and all the other features of the dual drive car and differ only in the position of the controls. The 4-passenger brougham fitted to the same chassis as the other cars seats three persons in the rear and one in front, the driver being at the left on the rear seat. Woods bodies are aluminum covered, and the upholstery and fittings much the same is in the 1914 models.

Future for Electrics, Dealer Thinks.

The steady growth in the use of electrics in Philadelphia is perhaps best indicated by the electric garages and chasing the property where he is located. That optimistic spirit is quite general among the Philadelphia garagemen who are interested in electrics. charging stations which have been opened in the outlying sections of the city. Among these is the Electric Garage, of which J. Howard Laverell is the proprietor, on Baltimore avenue near 45th street, in West Philadelphia.

Laverell states that when this garage was opened, between three and four years ago, there were but seven cars on storage. Since then electrics have increased in popularity for town use in West Philadelphia and the number of cars on storage is now 26, which he expects at an early date will be increased until he will be storing the maximum capacity, 35 cars.

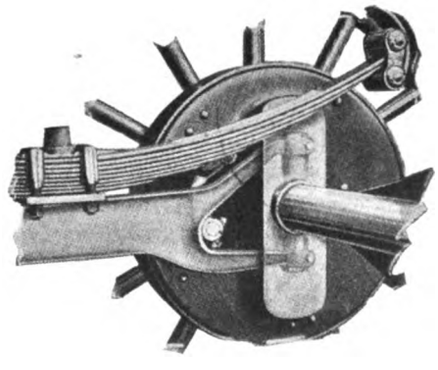
The building which he occupies is 32 by 138 feet and is but one story in height, allowing overhead lighting. Like many of the buildings in that city, it has side lights, as the value of ground there does not make it prohibitive to use space for light and air.

As the section of the city in which Laverell is located is furnished alternating current by the electric light and power company, he concluded that it would be more economical to generate his own current, and claims that by doing so a satisfactory saving is shown over the cost of service from the power company. As he makes a charge for charging batteries of 6 cents a k. w. hour, that part of his service shows a very fair margin of profit.

The charge which he makes for storage is $15 monthly, including washing, polishing and vacuum cleaning. Cars are delivered to homes of owners and called for at an additional charge of $5 monthly.

In cases of cars breaking down on the road he makes a charge of 50 cents per hour for hauling in the dead cars.

Laverell states that while the electric garage business is not at this time in such a condition as to attract persons seeking to engage in business, he had sufficient faith in the future of electrics in Philadelphia to feel justified in purchasing the property.



SPRING SUSPENSION DETAILS

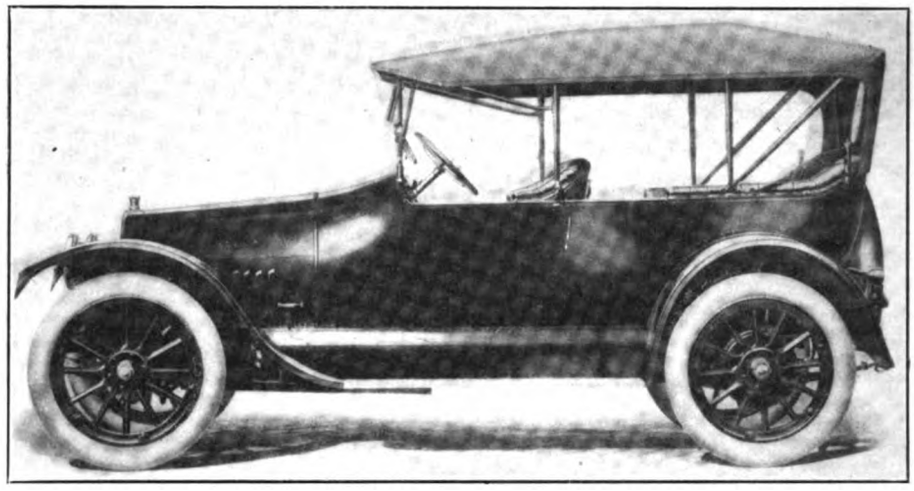
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Mitchell Adds Light Four Model for 1915

Costs $1,250, is Smallest Car in Line and Has T-head Motor—Embodies Good Features of the Larger Machines

DETAILS OF NEW MITCHELL LIGHT FOUR

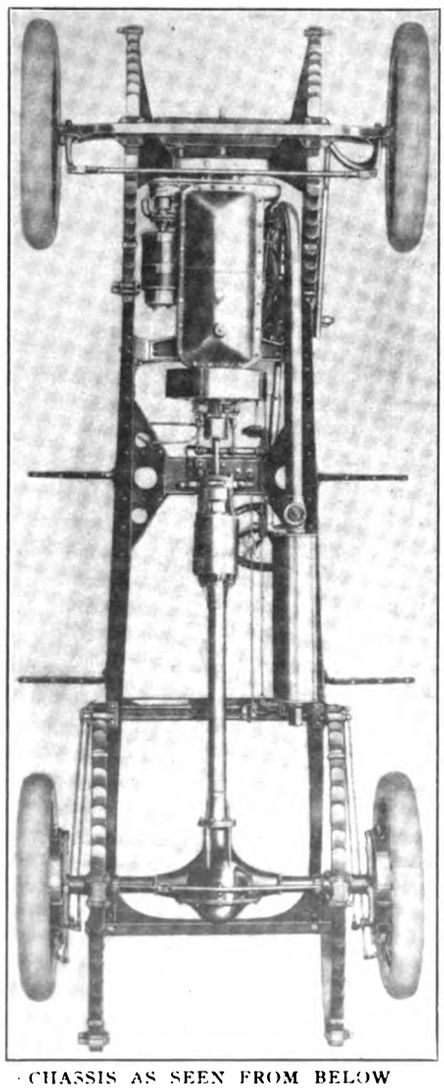
Price:	
Touring	$1,250
Roadster	1,250
Color	Dark blue
Make of motor	Mitchell
Number of cylinders	4
Shape	L-head
How cast	Pairs
Bore	4
Stroke	5½
S. A. E. horsepower	25.6
Engine starter	Aplco
Lighting system	Aplco
Clutch	Cone
Gearset	Selective, 3 speeds
Wheelbase	116
Front tires	34 x 4
Rear tires	34 x 4
Wheels	Wood
Steering	Left
Control	Center
Type rear axle	Floating
Options	56 or 60-inch tread
Equipment:	Top, windshield, speedometer, trouble lamp, headlamp dimmers, demountable rims, robe and foot rails, tools, etc.



SMALLEST MITCHELL, THE NEW FOUR SELLING FOR $1,250 EQUIPPED

A new four-cylinder model, smaller than any previous Mitchell, has been added to the line produced by the Mitchell-Lewis Co., Racine, Wis. The new car, which has a wheelbase of 116 inches, is to sell for $1,250 with full equipment, including Mitchell electric lighting and engine starting system. It differs from all previous Mitchell cars in that its motor is of the L-head type. Previously, the lowest-priced Mitchell has been the larger four, which sold for $1,595; the two other models—one a small six and one a large six—sold for $1,895 and $2,350, respectively. For the present, two-, five- and six-passenger bodies will be fitted to the new chassis; coupe, sedan and limousine bodies will be added later.

Keynotes of the Mitchell body design as illustrated in the new light four are clean lines, complete equipment and convenient operation. The running-boards are long, wide and covered with linoleum with aluminum edges. They join closely to the crowned fenders. The drive is at the left, with 18-inch steering wheel, whose hard wood rim has corrugated finger grips. Spark and throttle levers work over new type of noiseless and notchless sector. The sector does not turn with the steering wheel.



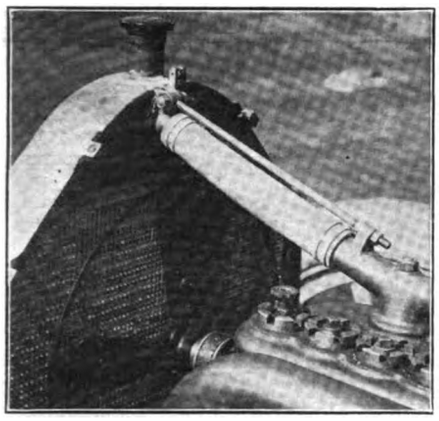
CHASSIS AS SEEN FROM BELOW

Gear and emergency brake levers are in the center of the car and far enough forward to allow the occupants of the front seats to leave or enter the car easily from either side. The gear lever is of the rocking type, without gate, and the bearings of both it and the brake lever are below the floor, so that grease and oil cannot soil clothing. Clutch and brake pedals work through the toeboard without making contact with it. The muffler cutout, which can be locked open by the heel, is controlled by a rod rising through the footboard.

The indicating devices and instruments are conveniently mounted on the cowlboard, and beneath the deep skuttle dash is the 18-gallon fuel tank, with its filler opening accessibly placed behind the glass front. Also in the cowlboard are the priming pump, for starting, the 60-mile speedometer, ignition switch, with Yale lock to prevent theft; gasolene gauge, oil gauge, and switches for the lamps. Over the speedometer is a lamp, which pulls out at the end of a flexible cord.

A unique feature of the Mitchell little four is the arrangement of the button which operates the concealed electric horn. The button is placed on the door at the left side in such a position that it can be operated by either the operator's knee or his hand. The difficulty of wiring attending the installation of

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SHOWING NEW RADIATOR SUPPORT

a button on the swinging door was overcome by using the hinges as a part of the horn wiring.

All of the bright parts of the car are nickel plated, while the body finish is dark blue. Bodies are all of an advanced torpedo, streamline type, without panels or mouldings, with flush doors, and concealed handles and hinges. There is ample leg and seat room in all bodies and the cushions are slanted to a comfortable angle and are 10 inches deep. Irons for carrying two extra tires, inflated or demountable rims, are provided at the rear of the car.

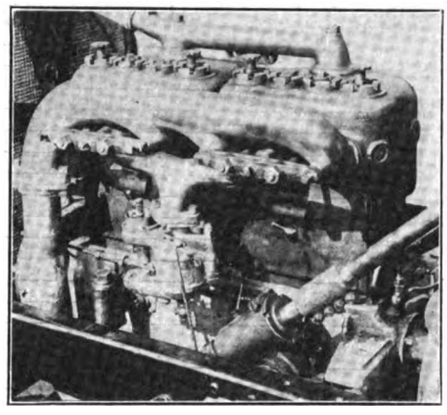
In addition to the Mitchell electric lighting and engine starting system, the light four carries all of the usual touring equipment. Searchlight dimmers of the parallel type are provided, as are one-man top, ignition lock, magnetic inspection lamp, license brackets, robe and foot rails and the usual complement of tools, etc.

The motor has four cylinders 4 x 5½ inches. The cylinders are cast in pairs and are of the L-head type with unusually large water jackets. The engine has pump cooling, and ignition is obtained from the storage battery and generator of the electric cranking and lighting system. The engine drives through a very accessible cone clutch of new design to a gearset amidships, which gives three speeds forward. From here the drive is taken through a shaft in a torque tube and a single universal joint to the floating axle.

Pistons are flat-topped, with three eccentric rings. Piston weight has been kept to the lowest figure possible, consistent with strength. Connecting rods, like the pistons, are very light and strong, being drop-forged in an I section from a special analysis steel that is both rigid and tough. The bearings of the piston pins are heavy-duty, dense bronze bushings, which work on hardened steel hollow pins. The bearings are 2 inches long and 1 7/32 inches in diameter.

Crankcases are of the barrel type without a parting on the bearing line, so that a pressed sheet-steel undercover in which the oil troughs for the connecting rods are formed can be removed for inspection or adjustment of the bearings without disturbing the crankshaft. The stiffening ribs in the crankcase are on the inside, so that a smoothly rounded exterior is obtained which makes for a clean motor.

Valves are one-piece alloy steel with hardened and ground stems and are of the non-warping type. They are 1¾ inches clear openings with seats beveled at the angle of 45 degrees. The inlet valve lift is 35/64 inch, and the exhaust 13/32 inch. Valve push rods are single pieces of hardened and ground steel with mushroom heads. The adjustment is effected by simple cap screws with case hardened heads and check-nuts, and the entire valve mechanism is completely enclosed in chambers covered by stamped steel plates and removable by hand.



VALVE AND CARBURETTER SIDE OF MOTOR

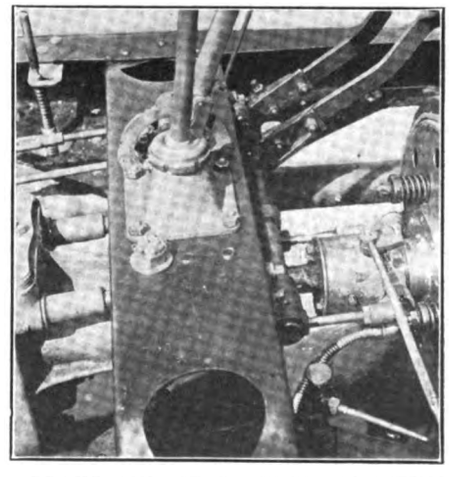
The lubricating system is a combination splash which has been employed in Mitchell engines for many years. Circulation is obtained by a plunger pump driven from the camshaft. Oil is pumped from the oil reservoir to the individual troughs under each connecting rod, and to the timing gear and to the silent chains at the front of the engine, as well as to a sight feed on the instrument board, which has two outlets, one feeding oil to the clutch bearing through a flexible conduit, and the other to the rear crankshaft bearing.

Starting, lighting and ignition is taken care of by a single electric system of Aplco construction. A single-unit motor generator is carried on the right side of the crankcase, and driven by a silent chain completely enclosed in the cast distribution gear case. The motor-generator is hung from trunnions at either end and can be lifted out of its cradle. It is geared at a low driving ratio, only 2.6 turns of the starting motor to one of the crankshaft. The generating function is so arranged that at a car speed of 8 miles per hour the generator is delivering 6 amperes to the storage battery, it is stated. The latter is located on the running-board, where it does not interfere with getting in or out of the car, but at the same time is handy enough so that the owner will give it the needed attention. Ignition is supplied by battery and generator current through a coil and distributor mounted accessibly upon the engine and driven through a special shaft.

Cooling is by a thin tubular radiator, and the connections to the water jackets on the cylinders, which are exceptionally ample, are by two tapered outlet manifolds, with heat-proof steam hose between engine and radiator to facilitate this assembly. The radiator is braced by a short rod paralleling the hose to the motor.

The fan and pump are driven by a single endless belt with provision for keeping it tight. An important feature of arrangement is the fact that if the pump is permitted to freeze in cold weather nothing worse can happen than momentary slipping of the fan belt.

The clutch is a cone, provided with spring inserts, and the remainder of the transmission system is practically a continuation of previous practice. The rear axle is of the floating type and final drive is by the usual bevel pinions. Front springs are elliptic and rear springs three-quarter elliptic underslung. Both sets of brakes operate on rear wheel drums, the hand brake being internal and the foot brake external. Both are quickly adjustable. Either 56-inch or 60-inch tread may be had by the simple expedient of interchanging the patent Mitchell hub.



BRAKE AND GEAR LEVER MOUNTING

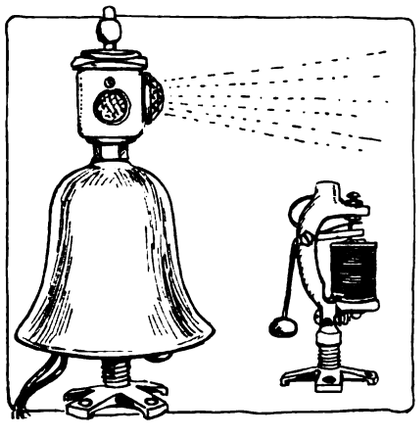
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RECENT DEVELOPMENTS in ACCESSORIES

Liberty Bell Motor Car Signal.

The idea of using a bell as a warning signal on a motor car has been brought into prominence by the Liberty Bell Co., Cleveland, O., which has placed on the market a signal of this kind. The bell is electrically operated.

A bell metal casting of conventional form is used, with the striking mechanism inside; the bell and its electrical apparatus are shown separately in the accompanying illustration, which explains it clearly. Pressure on the button, which may be placed for either hand or foot control, causes the hammer



LIBERTY BELL MOTOR CAR SIGNAL

to strike smartly against the bell. At the same time a lamp, which surmounts the bell, sends out a red flash, so that the warning appeals to both ear and eye.

The Liberty bell is made in two sizes. The smaller is 5 inches high and 5 inches in diameter and the list price is $10. The larger is 6 inches high and 6 inches in diameter and lists at $12.

Mats That Help Keep the Car Clean.

When the roads are muddy both the running boards and the floor of a car are sure to get in a messy condidtion unless some provision is made to remove mud from the feet. Mats that can be used to prevent this are manufactured by F. Cortez Wilson & Co., Chicago, are of fiber of high grade and are supplied in two styles, one having a steel frame all round and the other having free edges. For securing them to the running boards there are spring steel clips which, while they hold firmly, can be removed easily when the mat needs cleaning.

The Koklip mats are made in three sizes—8 x 14, 9 x 16 and 10 x 16. With steel frames the mats cost, list, $3.50 each, and without the frames, $2.50 each.

New Goodyear Heavy Truck Tire.

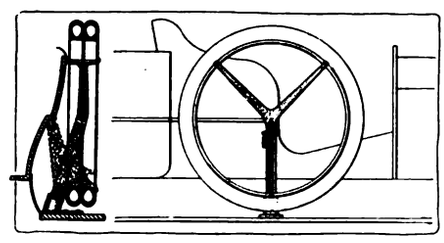
A new tire for heavy commercial service has been placed on the market by the Goodyear Tire & Rubber Co., Akron, O., and is designated as the S. V. tire. It is of the pressed-on type, having a channel bed which is forced on the wheel and requires no bands, keys, flanges or bolts to hold it. Once applied, it remains until worn out. Owing to the lack of complexity and the absence of extra parts it is said by the maker to be unusually light in weight, the saving in this respect amounting to as much as 1,200 ton-miles of haulage per year, figuring on 3½-otn equipment.

The base band is of corrugated section and its flanges are of ample depth to protect the bond between the soft rubber tread and the hard rubber base. The tread is flat, permitting a practically uniform distribution of load, and contains more rubber than is usual.

For applying these tires the apparatus required is a press and pressing rings. It is said that the application of a tire can be effected not only easily, but quickly, the time required being only 10 minutes or so, with proper apparatus.

Compact Holder for Spare Tires.

A holder for tires that may be attached to the running board or to the rear of the car, and that is compact, easily handled and holds securely, has been patented by Wilbur R. Urskine, Evansville, Ind., who has arranged for the manufacture and marketing of the device. The holder consists of a bracket

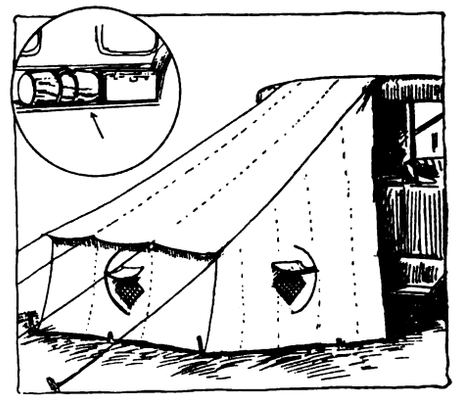


URSKINE SPARE TIRE HOLDER

with three arms radiating from the center, the ends of the arms being formed to engage with the inside of the tire rim. The holder is placed with one of the arms in a vertical position, the whole having the shape of a Y; the vertical arm is fitted with a clamp which, when closed and locked with a padlock, prevents the rim from being removed.

Tent for Motor Car Camping.

To meet the requirements of those who use their cars for extended trips and camping tours the Compac Tent Co., Indianapolis, Ind., has placed on the market a special tent that is designed to be



COMPAC PORTABLE CAR TENT

erected beside the car, no poles being required. The highest part of the tent is fastened to the car top, as the accompanying illustration shows, and the fabric is stretched by the usual guys and pegs. When not in use the tent rolls into a package 7 x 20 inches, weighing from 6 to 12 pounds, according to size.

Three sizes are made—7 x 5, 7 x 7, and 7 x 10. Each size is made in three materials, the prices varying accordingly. The list prices on the small size are from $23.95 to $31.50, on the medium size from $30.10 to $37.90, and on the large size from $35.60 to $48.30.

A damp-proof floor is sewed into the tent, making it bugproof and snakeproof. The largest size is provided with two entrances and with a partition curtain, so that there are two rooms, each with its own entrance. Large insect-proof ventilators are inserted, with flaps to cover them if they are not required. All tents are waterproofed.

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In Salesroom and Garage

Salon Jacobs, Birmingham, Ala., will erect a $10,000 garage on 6th avenue.

C. J. Kraus has opened a garage and repair shop at 813 John street, Hoboken, N. J.

Herbert Johnson, Webster, Mass., has purchased the Joslin House Garage; he will operate it.

The Cabarras Motor Co., Concord, N. H., is erecting a new garage; the site is on Church street.

Henry F. Walker, Medford, Mass., is erecting a garage and repair-shop; the site is at 49 Main street.

Harris A. Siem, Charlotte, N. C., has opened a repair-shop; it is located at 203 South Church street.

Threefoot Bros. & Co., Meridian, Miss., plan to replace their stables on 22nd street with a three-story garage.

N. P. Lowry, formerly of Waco, Tex., has established a Studebaker agency at Corpus Christi in the same state.

R. P. Whitty & Co., Washington, D. C., will build a two-story garage at 1529 M street; it will cost $18,000.

Frank Ebbeler has opened the Auto Exchange in St. Louis, Mo., at 2330 Oliver street; he will feature repairing.

Robert W. Powers has been made Rhode Island distributer of the Hudson; his headquarters are at 134 Broad street, Providence.

Brown & Bacon, a garage firm on Main street, Port Morris, N. Y., has dissolved partnership; Brown will continue the business.

New salesrooms for the Mitchell have been opened at Broad and Spring streets, Providence, R. I. Percival S. Clark is manager.

J. C. Oerbacker, Louisville, Ky., has been granted permission to build a brick garage at 1815 South 3rd street; the estimated cost is $6,000.

The McNaull Auto Tire Co., Toledo, O., plans to erect a new garage on Miami street; it will be ready for occupancy September 1.

C. H. McBroom and F. E. Tacon have taken over the Auto Sales Co., Mobile, Ala. A taxicab service will be a new feature of the business.

The City Garage, Lebannon, Tenn., has secured the agency for Buick cars in that locality; it will also stock a full line of motor car accessories.

H. M. Lanford, Washington, D. C., has awarded the contract for a new two-story garage to cost $10,000; it will stand at 53 New York avenue.

Contracts have been awarded for a new garage to be erected at 118th street and Concourse avenue, New York city, for John M. Ireland; it will cost $15,000.

The Vehicle Top & Supply Co., St. Louis, Mo., has secured the local agency for the Stromberg carburetters; the device formerly was handled at 3335 Olive street.

Roy Campbell and P. Reddy have become dealers in motor cars at Rockford, Ill., representing Reo and Oldsmobile lines. They have rented the Knowlton garage.

The J. C. Tucker Co. has been formed in Providence, R. I., and has located in the former Fiat salesrooms on Snow street; the company handles the Paige and National.

The Baker Taxicab Co., Dayton, O., has been taken over by Joseph Michel, formerly connected with the Algonquin Hotel; the taxicab office is at 123 St. Clair street.

S. G. Creech and G. C. Tippins, Fort Worth, Tex., have formed the Chalmers Motor Sales Co. and have located in the Denver Record building; they have the Chalmers agency.

The Middlewest Automobile Corp. has been formed in Joliet, Ill., by William Oliver, Merle Plant and August Beltzner, with a capitalization of $1,000; they will open salesrooms.

To operate a full line of five- and seven-passenger taxi cars, both day and night, the Jackson Motor Taxi Co. has located headquarters at 310 Main street, Davenport, Ia. A. R. Garwood is the manager.

McLeod & Co. is the style of a new firm which has established a garage at Blytheville, Ark. The company will stock all kinds of repair machinery, specializing in repair work on motor cars and other vehicles.

W. F. Crumbaugh, who has operated a garage for three years in Leroy, Ill., has sold out to W. E. Mitchell, Chicago, and J. L. Jeter, St. Joseph, Mo. They will operate it. Crumbaugh will remove to Ada, Minn., where he owns real estate.

The Savage Tire & Rubber Co. has opened in San Francisco, Cal., in the heart of Auto Row, one of the largest tire stores on the coast, making it the distributing point for Northern California and Nevada. C. W. Whitson, formerly with the Los Angeles branch, is in charge.

Ralph Penn, having severed his connection with the Ralph Temple Automobile Co., Milwaukee, Wis., has started in business for himself as a motor car dealer. He has secured the agency for Baker electrics, which will be continued at 137 Oneida street, and will also stock a full line of motor car accessories.

Frank Schemerhorn has leased the new building on Division avenue, Grand Rapids, Mich., in which he will conduct an up-to-date garage. The two-story structure, 62 x 100 feet, is of brick and concrete material, fire-proof throughout, and special provision has been made for storage of both motor cars and trucks.

The Frye Motor Car Co., which in December last succeeded the Lindsay Motor Car Co., has let the contract for a two-story and basement building, 50 x 143 feet, at 3329-3331 Locust street, St. Louis, Mo. The new structure will be ready for occupancy about October 1. The company has the agency for Paige and Premier cars.

John McDonald and Bob Herrick, who have operated as the Hub City Auto Co., in Marshfield, Wis., have dissolved partnership, Herrick retiring. The company will continue a general motor car repair business and will stock a complete line of gasolene, oils and motor car accessories. It will retain the agency for Overland and Stutz cars.

The Marion Automobile Co., has removed from Omaha, Neb., to Council Bluffs, Ia., where it has established headquarters at 612 South Main street. In addition to the Marion line of fours and sixes, the company also represents the Nordyke & Marmon Co. and has secured the local agency for the Ford. C. W. McDonald, of Council Bluffs, is the manager.

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Advanced Maintenance

REPAIRING THE DAMAGED FENDER

By George Fernwell

In this article Mr. Fernwell takes up the subject of treating fenders that have been subjected to rough handling.

There is nothing that looks worse on a car than fenders that are bent out of shape or are not in their proper positions, and there is nothing that is so difficult to hide as a distorted fender.

In this article and in those that will follow it Mr. Fernwell tells in his detailed way the best methods of making all sorts of fender repairs, leaving nothing unexplained.

The writer speaks whereof he knows, as was the case in the radiator articles, and the illustrations will show in the clearest possible way such details as can best be shown graphically.

The information given is exactly the kind of information the repairman requires if he is not already a past master in this class of work. It is all intensely practical, and in following the directions given it distorted fender. Paint and varnish only accentuate bulges and hollows.

Undoubtedly it is true that the outward appearance of a car is of secondary importance to the condition of the working parts within. It is equally true, however, that the impression made by a car upon the casual observer depends entirely upon the condition of external parts which are almost without exception of sheet metal.

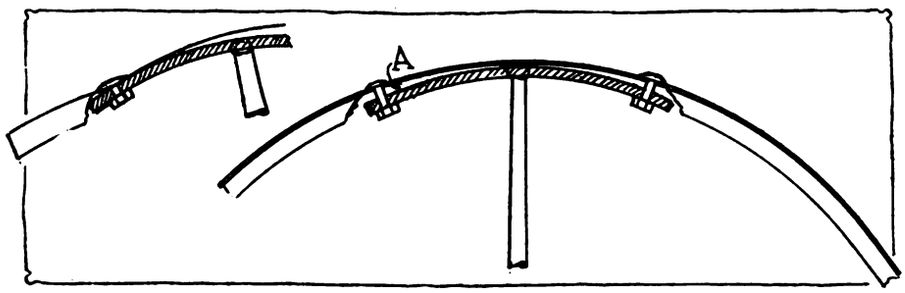


FIG. 1—BADLY FITTED FENDER IRON WHICH DOES NOT CONFORM TO THE CURVE OF THE FENDER. ON LEFT, CURVE IS INSUFFICIENT. ON RIGHT, CURVE IS EXCESSIVE, LEAVING GAP AS AT A. IN ALL CASES CURVES SHOULD CORRESPOND EXACTLY

Frequently the cause of the marred appearance of a car is not at once obvious. but proves upon investigation to be caused by the distortion of a fender having a narrow rim around the edge. (Fig. 3) This type of rim is very easily stretched by careless pulling on the end. It is somewhat difficult, and not a matter of common shop practice, to restore a fender to its normal contour after the rim has been stretched as referred to. An effective and practical method of doing this will be discussed a little later.

Assuming that a car is brought to the repair-shop to have one or more damaged fenders repaired or replaced with new ones, the owner, in all probability, may not be aware of anything like a sagging runningboard or bent fender iron being at the bottom of the matter and therefore it is a precaution the repairman should take of pointing out the nature and extent of the need for such additional work as is necessary preliminary to refitting the new or repaired fender properly.

Unless the runningboard is at its normal level and the fender irons properly straightened or readjusted accurately, the old or new fender, as the case may be, cannot be fitted in proper alignment.

We will assume a typical case of bent runningboard brackets and fender irons.

Obviously the variety of possible distortions of the brackets and irons is unlimited, so that only a number of typical examples known to occur in actual practice will be discussed with the methods and tools employed in straightening and readjusting. Most indispens able of special tools required are a pair of bending irons (Fig. 4). These if not readily purchased ready made can be forged by any good blacksmith.

The dimensions given in Fig. 4 may be varied to suit special conditions or several pairs of bending irons bent to

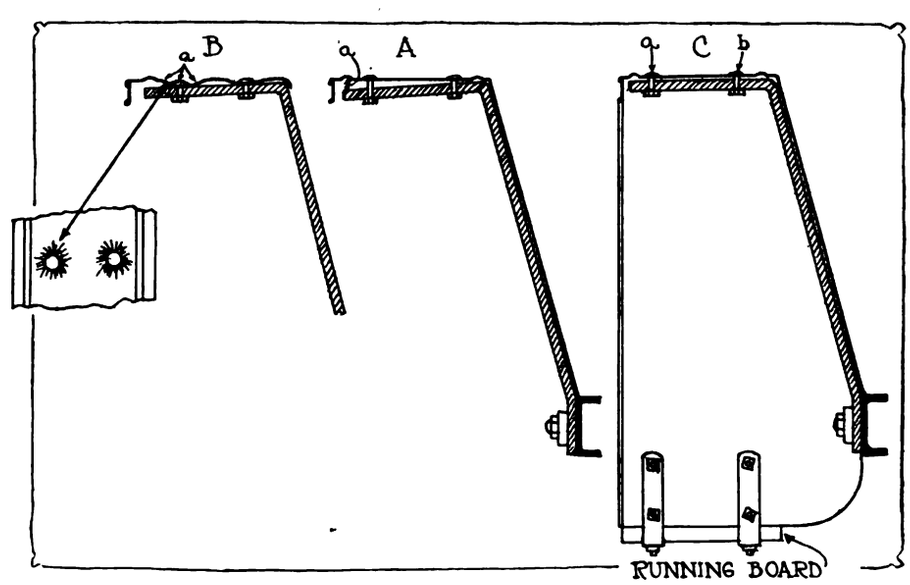


FIG. 2—FENDER IRON SHOWN AT B IMPROPERLY SET AND FENDER PULLED OUT OF SHAPE BY RIVETS, ERROR BEING SHOWN IN AN EXAGGERATED WAY. FENDER IRON AND FENDER, A, AT DIFFERENT ANGLES, LEAVING OPEN SPACE, A. C INDICATES THE PROPER WAY TO DO THE JOB

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different angles or offsets and with varying distances between the two fulcrum pins. If the bending irons are made of tool steel they can be made correspondingly lighter in cross section. This applies especially to the fulcrum or bending pins, permitting effective use of the bending iron in close quarters. Other tools required for the work may be considered as generally available, such as a pair of jacks. Other special tools will be described as required to carry out the particular repair in hand.

The fender shown in Fig 3 has had its rim stretched at the point A by recklessly pulling the car by means of the front end of the fender; at point C a side collision, in which the runningboard and one of its supporting brackets have been bent upwards, has caused a possible curving of the straight portion of the rim as indicated.

In restoring the stretched portions of the rim to their original contour it is advisable to hea the stretched portions with a blow-pipe or torch to avoid cracking the rim in repairing. As a red heat is required the paint will be burnt off. Therefore the need of subsequently painting or touching up should be pointed out to the owner before proceeding with the work.

Remove the fender from the car. Assuming that the corresponding fender on

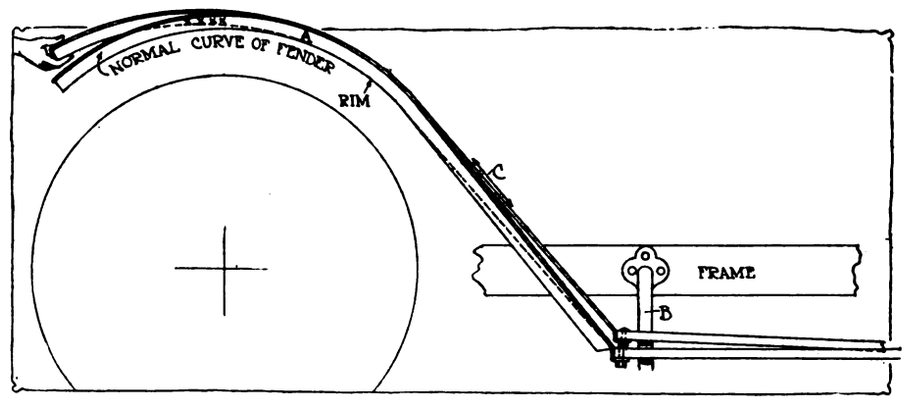


FIG. 3—FENDER THAT HAS BEEN PULLED OUT OF SHAPE BY DRAGGING ON THE FRONT END AS SHOWN; ALSO RUNNINGBOARD BRACKET B HAS BEEN BENT AND MUST BE STRAIGHTENED BEFORE FENDER CAN BE PUT BACK IN ITS PLACE

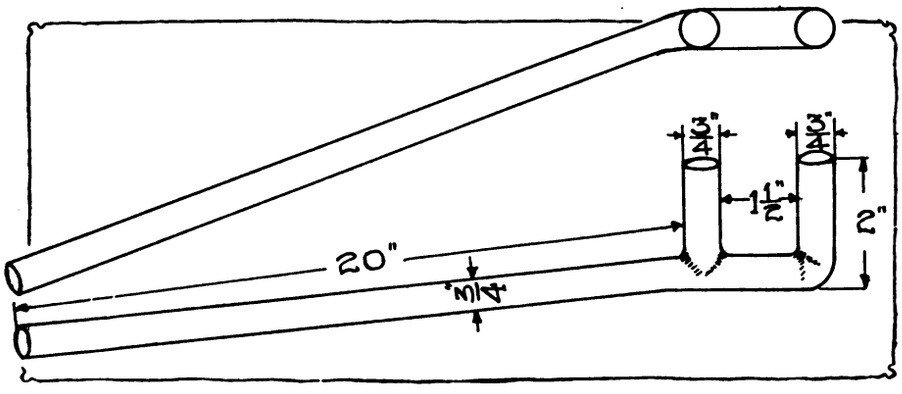


FIG. 4—BENDING IRON USED IN FENDER REPAIR WORK, CAN BE MADE BY ANY GOOD BLACKSMITH. IF MADE OF TOOL STEEL THIS APPLIANCE WILL BE CONSIDERABLY LIGHTER WITHOUT ANY SACRIFICE OF STRENGTH

the opposite side of the car is in perfect shape it can be taken as a model or guide in reshaping the damaged fender. If it is convenient the undamaged fender should be removed, laid on a large sheet of paper and a tracing made of the exact curve of the rim of the fender corresponding to the rim which is to be repaired.

If it is not advisable to remove the undamaged fender, a piece of sheet metal may be held against the rim of the good fender and the contour marked on the sheet metal with a pencil or scriber.

In making the sheet metal template care should be taken that the piece of sheet metal is held as flat and as perpendicular as possible against the rim of the good fender while scribing the contour of the latter upon the sheet metal.

If not perpendicularly held the outline of the template will not perfectly correspond with that of the fender. As a further guide a mark should be made with a soft lead pencil on the extreme edge of the fender, indicating a point exactly opposite the center of the fender iron where the latter is in contact with the fender.

Coinciding with the described mark, a corresponding mark should be made on the sheet metal or paper template when scribing the contonur of the fender. Also another mark should be made on the template exactly coinciding with the extreme tail end of the fender. As the good fender is obviously for a different side than the damaged fender—that is, one is right and the other is left—the sheet metal or paper template must be cut with shears or scissors to the scribed line of the contour of the good fender, for the reason that in actual use, as a guide in straightening a damaged fender, the latter will be applied to the template on the reverse side to that on which it was scribed when applied to the good fender.

Before cutting out the template to the scribed line, the marks which indicate the extreme tail end of the fender at the point opposite the center of the fender iron must be extended to the opposite side of the scribed line to avoid removing them altogether when cutting out the template.

Next take the damaged fender to a bench where blow-pipe, vise and a pair of clamps are available. With the blow-pipe make the stretched portions of the fender, indicated at Fig. 3, red hot. Extend the application of heat 2 or 3 inches further at each end of the stretched portion of the rim of the fender. Commencing with the stretched portion of the rim, clamp the forward end of the fender to the bench.

With a wooden mallet or rawhide hammer carefully drive the stretched portion outward, at the same time applying force with the left hand so as to raise the tail end of the fender and cause a considerable bowing or curving of the body of the fender to a lesser radius than that of the normal contour of the fender as indicated by the template.

U. S. L. Receivers Furnish a Bond.

James O. Moore, Buffalo, and James A. Roberts, New York, filed a joint bond of $100,000 Saturday, July 25, in the United States District Court in Buffalo, N. Y., as receivers of the United States Light & Heating Co. They had been appointed at the request of the Central Trust Co. of New York, which has a claim of $200,000.

Louis S. Posner, counsel for the company, has filed an answer, admitting the allegations made in the petition for a receivership. The court ordered the answer by A. Henry Ackerman, Niagara Falls, vice-president, admitting fraud and mismanagement, stricken out.

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BOSTON DEALERS BETTER BY 20% THAN LAST YEAR

(Continued from page 6.)

J. W. Bowman, of the Stevens-Duryea, said last year was his best season, and he ordered an increased allotment for 1915. He said that a conservative estimate for him would be about 20 per cent better, and this, too, in view of the fact that the price was somewhat higher.

F. E. Bradfield, of the Velie, stated that while his business in Boston was not so large, due to a change from a branch to an agency, and therefore losing a few months when the car was not represented in Boston, yet his entire New England business was more than 30 per cent ahead.

Manager J. L. Snow of the Peerless said that conditions had improved last year for his product and that there was a steady gain throughout the year until the total had gone above 20 per cent.

E. A. Gilmore, of the Whitten-Gilmore Co., dealer in the Chalmers, said that the company had done a better business than in the preceding season, more than enough to give a substantial balance.

Manager J. S. Hathaway of the White said that one should include trucks as well as cars in his line, for the company was doing a great deal of commercial selling. So the total aggregate of the two lines showed a balance of more than 25 per cent over a year ago.

C. E. Fay, of the Ford, said that his business was increasing all the time and he referred to the fact that the new building was crowded keeping up with the rush. He said that as a matter of fact there were no seasons for the Ford, and with better facilities in getting them out there were more sales.

C. P. Rockwell, who has the Jeffery, said that he thought a year ago he had done remarkably well, but the past season was far ahead of expectations. He said that the increase whould run close up to 30 per cent.

J. M. Linscott, of the Reo, also did a better business he declared. Ralph Coburn, district manager for the Maxwell, said that his cars sold well all over the State and very well in Boston.

R. R. Ross said that the demand for Fiat cars showed a very good jump just now since the announcement of the new model. For the year he said that the company had showed a gain.

Manager Travis of the Locomobile said that his cars year after year added newer totals, and last season the gain was very satisfactory. F. A. Hinchcliffe, of the Winton, reported a gain.

Dealers' Opinions

Editor Motor World:

Ever since the first instalment of the "Reilly Series" I have looked forward to each succeeding week and read the article with unflagging interest, and have found them all to my great benefit.

In your issue of July 15, relating to form letters, I am especially interested, owing to the fact that we are preparing for our own use a series of form letters. I am a believer in aggressive selling methods. Also, I am a believer in "form letters." Some men particularly state their willingness to receive literature, but do not care to be personally solicited.

Your letter No. 1 is to my mind, a perfect introduction.

I do not personally believe in ever advising a prospect not to buy my car, as you have done in letter No. 2. If we differ as to what his requirements are, I try to win him over to what we have. Failing to do so, he will doubtless buy another car, with or without my advice. I have never seen the need of a salesman if the prospective purchaser's idea of his requirements is to prevail. Very often a customer will thank a salesman for removing a prejudice, or advise and persuade him as to what his requirements are.

Your letter No. 3 I will revise to be adaptable to our location and style of construction; otherwise, we will use it as it is.

The alternative "speed letter" I do not care so much for; in fact, I care for it the least of all. Few cars are sold on "speed" nowadays. I doubt if a letter will have much effect on a "speed bug." You see, I believe that a desire for excessive speed is a form of lunacy.

Your letter No. 6 is an excellent fetching letter, although I do not believe it necessary to apologize for having written before, and I certainly would not state specifically that the preceding letters numbered "five." It takes the personal touch away, and if your man had thought the letter was an individual one, he is at once undeceived and your form letter is stripped to a mere "form letter."

On the whole, the series is a very good and clever selling talk, showing careful study as to what the prospective purchaser of a motor car really requires, and the arguments are presented in a clear, concise manner. Such letters as these would certainly appeal to me. Every dealer should read the series, and will undoubtedly find them a great benefit. I certainly intend to use the ideas, especially as expressed in letters Nos. 1, 2 and 4.

Pardon my criticism and accept my thanks for the helpful hints in your columns.

Yours very truly,
A. G. PERRETZ,
New York City.

Editor Motor World:

I notice in your issue of July 15 your reference to another patent of Edward P. Cowles, which issued to the Packard company on the 14th instant. The inference might be drawn from your article that this patent relates only to removable and interchangeable wheels, whereas as a matter of fact some of the claims cover the steering knuckle and bearing arrangement without regard to the removability of the wheel.

A close analysis of the patent shows that claims 7 to 11 and 16 to 18 relate to removable and interchangeable wheels, and claims 12 to 15 to removable wheels regardless of interchangeability. Claim 5 also covers a detachable wheel but relates more particularly to the arrangement of the trunnions of the steering knuckle between the inner and outer hub members.

Claims 1 to 5 and 6 I believe cover broadly the use of a wheel and steering knuckle in which the inner of the two ball bearings is approximately vertically in line with the point of contact of the tread of the wheel with the ground, and claims 2, 3 and 4 relate to such a wheel and bearings with an inclined steering spindle. I think claim 4 is a fair example of this group of claims, and reads as follows:

"In a motor vehicle, the combination with the front axle, the stepped spindle pivoted thereto, a large bearing mounted at the base end of said spindle, and a smaller bearing mounted at the outer end of said spindle, of a wheel having a hub mounted on said bearings and inclined so that the point of contact of the tread thereof with the ground is approximately vertically in line with the inner and larger of said bearings."

While undoubtedly the detachable and interchangeable wheel feature of this patent is of considerable interest to the industry due to the fact that the wire wheels that are now being introduced are made both removable and interchangeable, yet I believe that the inclined steering knuckle feature is fully as interesting, and is likely to prove as important, or more so, to the industry at large.

MILTON TIBBETTS,
Patent Counsel Packard Motor Car Co.

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MOTOR CLUB FORMED FOR TRADESMEN IN NEW YORK

Succeeds to Former Headquarters of Manhattan Automobile Club—Get-together Spirit Predominant Object.

For the purpose of providing a social organization for the motor tradesmen of New York city, the Motor Club, Inc., has been formed and has taken possession of the rooms at 222 West 59th street, formerly occupied by the now defunct Manhattan Automobile Club. A restaurant, bar, billiard rooms, library and other essential club adjuncts are provided and members are admitted upon payment of an annual fee of $20.

Aside for its social and acquaintanceship features the organization plans to use its influence in legislative matters. Dances, entertainments and club runs are planned. It was brought into being by a committee consisting of Samuel S. Toback, George H. Robertson, Edward F. Korbel, Edward C. J. McShane, William C. Poertner, James C. Nichols and James M. Carples. Merle M. Downs is acting as secretary.

Oakland Men in New Light Car.

A company which will produce a light car selling at $800 or $900 is being formed by the following former officials of the Oakland Motor Car Co.: George E. Daniels, vice-president and general manager; Howard Bauer, assistant sales manager; J. H. Newmark, advertising manager; W. R. Williams and L. Eccelston. The company will start with a capital of not less than $300,000 and will employ 200 men. Citizens of Pontiac have subscribed $7,500 to apply on the purchase of a site for the factory.

Klaxon Sues Lozier Newark Dealer.

The Lovell-McConnell Mfg. Co., Newark, N. J., maker of the Klaxon horn, has filed suit in the United States District Court in that city against the W. C. D. Motor Car Co., Lozier dealer; it is charged that the dealer infringes the original Klaxon patents, Nos. 923,048, 923,049 and 923,122, by using the Sparton harn as standard equipment. This is a different court district from those in which other Klaxon suits have been filed.

Packard Prefers "Semi-floating" Axle.

The rear axle of the Packard car is of the semi-floating type, with a massive single bearing close to the wheel hub at each end and a bearing at the center on each side of the differential. In the description of the 1915 Packard cars published in Motor World for July 15 the rear axle is referred to as of the floating type, which might be misunderstood by those not familiar with Packard construction. The trunk rack, referred to as part of the regular equipment is really an extra.

Altree Made Bosch Vice-President.

Two important changes have been made in the organization of the Bosch Magneto Co., New York. A. H. D. Altree, who has been the manager of the Bosch Chicago branch, has been elevated to the post of vice-president of the company. He will make his headquarters at the main offices in New York. F. D. Norman, who has been in charge of the Bosch company's Toronto (Can.) branch, succeeds to the duties of Mr. Altree in Chicago.

Schrader Enjoins 35% Supply.

A preliminary injunction has been issued in the United States District Court in New York against the 35% Automobile Supply Co. in the suit brought by A. Schrader's Son, Ins., charging infringement of the Twitchell tire gauge patent.

Argo Moves Offices to Jackson.

The New York office of the Argo Motor Co., Inc., 7 East 42nd street, will be discontinued August 1. On and after that date the executive offices of the company will be at Jackson, Mich., where the factory is located.

Studebaker Man Back From Europe.

Vice-president and Chief Engineer James G. Heaslet of the Studebaker Corp., has returned from an extensive trip through England, France and Germany, during which he made a close investigation of the trend in motor car construction abroad and the requirements of the foreign market in relation to American export business.

"The present tendency abroad," he said, "is for very small engines of long stroke —engines that are clean and simple in design and highly efficient, reducing the gasolene consumption to the minimum. There must be light reciprocating parts, with ample bearing surfaces, producing a high-speed, smooth-operating motor.

"The tendency is also towards greater comfort, and American body designers have something to learn abroad. American manufacturers build a better chassis, however."

NATIONAL REPORTS BEST YEAR THOUGH SHORTER

Period Just Passed Cut to Ten Months But Equals Former Twelve-month Business—Planning New Buildings.

The annual meeting of the stockholders of the National Motor Vehicle Co. was held this week. and, according to George M. Dickson, generfal manager, the season just closed has been an exceptionally good one.

"It has been customary to hold these annual meetings in September," said Dickson, "but we closed our fiscal year this season June 30, which gave us only a ten-month year. As soon as inventory could be completed our reports were ready and show that the last ten months have been the most successful the National car has ever enjoyed.

"The fact that in ten months the National has enjoyed a record-breaking number of sales that under better conditions would have been considered, a good twelve months' business, indicates to us that the country as a whole is on the upward trend to sound and permanent prosperity."

Dickson has been associated with the National company in an executive position for many years. In fact, many of the heads of departments at the National have been there for years.

When questioned about the properties adjoining the National factory, which have been acquired by that company, Dickson stated that they were not ready to announce the details of the new National buildings, but this year's successful business meant that there would be no curtailment and that the addition contemplated would go forward as had been planned.

Westinghouse on Singer and La France.

Two more companies have adopted as standard equipment the lighting and starting system produced by the Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa. One of these is the newly incorporated Singer Motor Co., Inc., Long Island City, N. Y., which will use Westinghouse equipment on its new cars. The other is the American La France Fire Engine Co., Elmira, N. Y.

Jeffery Six Tires Are 34 x 4.

Thirty-four by four is tire size of the Jeffery Chesterfield six. The description mentioned it as 33 x 4.

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Efficient Basis for Every Sales Move Brings Results for Dealer

Boston Buick Man Believes in No More Than Three Calls on Prospect—Finds Real Reason He Won't Buy—Studies His Business.

When the Indians buried their dead they used to put weapons into the grave so the departed warrior would have something to work with in the Happy Hunting Ground.

When the Boston Buick Co. buries a dead prospect it follows out the same method. It inters with the deceased five written reasons why he should buy a Buick. The prospect—whose name is about to be classed as dead—is requested to take these reasons home and give them careful consideration.

It is hoped that the prospect will be impressed by them and come back some day and that if he considers another make of car these reasons will hang around and be a stumbling block in the path of the rival dealer.

Believes in Getting Right Start.

It is one of the numerous ideas worked out by John H. Johnson, the proprietor and active manager of the company. In attempting a sale Johnson believes in getting a right start. One hundred per cent efficiency, he believes, means closing every attempted sale on the first interview, and his force tries to do it. Sometimes it does.

Much attention is paid to obtaining from the customer the correct information. As this company's business is strictly retail much attention is paid to territorial rights and privileges. The first information to be obtained from a customer is whether or not he lives in the territory handled by the company; whether or not he owns a car at the present time and what the make is, and whether or not he himself is buying the car or just looking at machines for other parties.

With this information at hand the salesman has something definite to work on; customers of this type are considered to be prospective buyers and are considered as such by the salesmen. A great deal of time may be lost by the salesman talking with a man who may live outside the points of the salesman's territory, who is only looking for someone else, or a person who may not really be interested in the immediate purchase of a car.

As a rule appointments are made from the showrooms, from which demonstrations are given; after the demonstration—which includes a trip through the company's warehouses, parts and sundries department, storage department and service station—the prospective purchaser is brought back to the salesroom, where he is shown the model he has just ridden in, in its various styles of finishes.

If the prospect cannot be closed on the first interview it is considered up to the salesman to ascertain by some manner or means the reason why the sale could not be consummated. "Many orders are lost," states Johnson, "by a salesman through failure to secure the genuine reason—not the reason the customer gives you, but that underlying reason which prevents a customer from owning the car you are selling."

If the order is not secured on the first interview an effort is made to make an appointment with the customer some time within the next three days, at which time a summary of all the good points of the car is taken up again and additional points which may have been omitted on his first visit to the salesroom. If the prospect does not close at the third interview his name is placed in the "dead" file where it is kept for future reference.

Hands Out Five Written Reasons.

Before leaving a customer the salesman gives him five written reasons why he should buy a Buick car, and he is requested to take these reasons home with him and to give them his serious attention.

"Catalogs and printed matter describing the car are of value," states Johnson, "but nothing impresses the customer more than the personal giving of these facts."

The Buick Boston Co.'s sales force, one of the large retail sales organizations in New England, consists of nine pleasure car salesmen, two truck salesmen and three used car salesmen. Each department works independently of the other but all are under the one management.

A meeting of the sales force is held each week in the company's offices, where various matters are taken up for discussion—such as the progress made on some particular deal; various phases of competition, and the business possibilities for the following week.

Benefit Derived from Conferences.

At these meetings one of the salesmen is required to "sell" a car to a would-be prospect; the other salesmen being required to take notes and criticize the manner in which he is handling the prospect, and after the customer has either given his order or walked out of the store these criticisms are discussed at length and suggestions made which would help improve the salesman's efficiency.

"Great benefit can be derived from a demonstration of this kind where there is always something new to be learned about the selling of a motor car," says Johnson.

As an aid to this sales force the company furnishes each man with a loose-leaf hand book in which he keeps records and information of all used cars taken in trade, and other details, such as weights, specifications and the weak and strong points of competitive makes of cars. The company also furnishes a loose-leaf binder, in which each salesman keeps on file many selling points which have been used in the organization covering a period of the last five years.

A rigid rule is: "Coats on, hats off in the salesroom."

RULES AND POINTS IN BOSTON BUICK SALES PLAN.

Give five written reasons to prospect, who is about to be given up, telling why he should buy a Buick.

Get definite, working information about prospect before starting on him. Waste no time.

Find real reason why prospect doesn't buy.

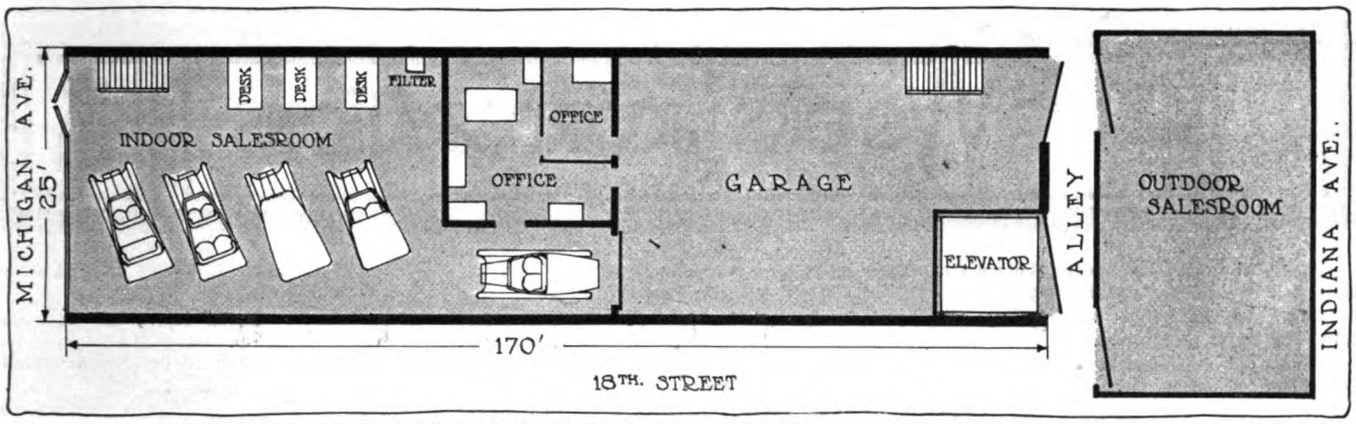
Class prospect as dead after third unsuccessful interview.

Sales meeting every week.

Salesmen keep note-book with data about Buick and all competing cars.

Coats on, hats off in salesroom.

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REGULAR SALESROOM FRONTS ON MICHIGAN AVENUE—THE OUTDOOR SALESROOM IS ACROSS AN ALLEY AT THE REAR

Adds Outdoor Salesroom for Used Cars

Hay of Chicago Gets Sunlight on Used Vehicles—Finds Many Advantages.

Instead of cluttering up his salesroom with used cars, Thomas J. Hay, Chandler and Hupmobile distributer, Chicago, has added an "out-door salesroom" for the used vehicles and already has found numerous advantages in the plan. The "out-door salesroom" is a vacant lot at the rear of his place of business at 1725 Michigan avenue and is separated from the building he occupies by an alley. It is surrounded by a high fence.

The used cars are kept in this enclosure in the day time and customers' cars which require adjustments may be run in there also. Having sunshine on the used cars is one of the advantages of the plan; they look more bright and cheerful, which helps a lot when a man has an unexpressed belief that a used car is bound to look "used."

When used cars were kept in the new car salesroom it was unhandy and inconvenient to get them out and they were not an attraction standing side by side with the new cars.

The demonstrating models also are kept in this lot. Getting them into and out of the salesroom was another unhandy job. If they were left in the street in front of the salesroom there also was always the danger of collision, which has been obviated.

Play Square With the Transient.

"How much is gasolene?" queried the customer.

"Fifteen cents a gallon," was the immediate answer, heard plainly by the motorist and his wife. It was the proprietor himself speaking.

"Twelve gallons. That'll be one dollar and ninety-two cents," said the proprietor as he grabbed the two-dollar bill tendered him.

"But your said fifteen cents," protested the motorist.

"Well I meant sixteen," said the proprietor.

That was all the satisfaction the motorist got. Inquiry at other local garages and of the man's own customers revealed the fact that he was selling local users every day at the "regular" price of fifteen cents.

No, this man did not lose any bets to make money. Oh dear, no. And he can't trust anybody but himself to run the cash register!

Strange that few customers have confidence in him, is it not? He thinks he is only cheating his customers, when, as a matter of fact, he is cheating himself more than he is anyone else.

This same dealer charged $1.50 for a wash and polish and washed only the outside of the wheels. You'd have thought the car had eight wheels instead of only four, and he was trying to keep the work within orthodox bounds. And the polishing job was about the same beautiful result you get when the rain drops on your brass work.

And the windshield was not washed, and the fenders had not been wiped even after the white polish intended for the brass work had been poured on them.

Did the proprietor falter when these slight defects were called to his attention? Not he. He had already extracted his pay. And besides he wasn't much interested. It was only a transient kicking.



WITH SUNLIGHT ON THE USED CARS HAY SAYS THEY LOOK BETTER TO THE PROSPECTIVE BUYER—DEMONSTRATORS ARE KEPT THERE, TOO

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The Week's Incorporations

Toronto, Can.—Canadian Storage Battery Co.; capital $40,000; to manufacture storage batteries.

Los Angeles, Cal.—Flitz Auto Supply Co.; capital $5,000; to deal in supplies.

Toronto, Ont.—Suburban Motor Bus Co.; capital $250,000; to operate a bus line.

Adrian, Mich.—Adrian Carburetor Co.; capital $50,000.

Springfield, Ill.—Illinois Omnibus Co.; to operate a 'bus line.

Avon, N. Y.—Avon Garage; capital $6,000; to operate a garage. Corporators—F. W. Isham, A. Russell, L. P. Tabor, all of Avon.

Detroit, Mich.—Wallace Shock Absorber Co.; capital $5,000. Corporators—William J. Wallace and others.

Painesville, O.—Vulcan Carriage Co.; capital $1,000,000; to manufacture and deal in automobiles and other vehicles.

Stamford, Conn.—Enterprise Tire Shop; capital $5,000. Corporators—Claude L. Frost, Rupert C. King, John M. Carl, Harry J. Bond.

South Bend, Ind.—League Tire Co.; capital $250,000; to deal in tires. Corporators—W. P. Furcy, R. J. Miller, M. Brung.

Louisville, Ky.—Electric Garage Co.; capital $25,000. Corporators—George Bader, Frank S. Querbacker, J. Woodford Button.

Covington, Ky.—United States Motor Truck Co.; capital $250,000. Corporators—R. C. Stewart, B. Bramlage, M. H. McLean.

Augusta, Me.—King Tire Protector Co.; capital $300,000; to make and deal in tire protectors. Corporators—F. L. Farnham and others.

Cleveland, O.—Simplex Distributing Co.; capital $10,000; dealer. Corporators—M. E. Job and others.

Norwalk, Conn.—Hardware & Auto Supply Co.; capital $5,000. Corporators—P. C. Sturgis, Bronxville, N. Y., and others.

Salt Lake City, Utah—Grady Motor Co.; capital $25,000. Corporators—C. Q. Smith and others.

Tonawanda, N. Y.—Echo Motor Co.; to deal in cars, bicycles and motorcycles. Corporators—George Houck and others.

Jersey City, N. J.—Kamler-Southworth Co.; capital $10,000. Corporators—E. Southworth, Rivervale, N. J., and A. A. Letts, Jersey City, N. J.

New York, N. Y.—Buick Auto Repair Co.; capital $5,000. Corporators—J. O. Kelly and others.

Greenwood, Miss.—Kimbaugh Auto Co.; capital $50,000; to operate a garage and repair-shop.

Cleveland, O.—P. F. Henn Co.; capital $10,000; to deal in engines and motor cars. Corporators—P. F. Henn and others.

Indianapolis, Ind.—Fourteenth Street Garage; capital $2,000; to operate a garage. Corporators—H. B. Littman and others.

Portland, Me.—Harvard Motors & Mfg. Co.; capital $100,000; to sell and deal in motors. Corporators—M. A. Thurston, Portland, Me., and others.

New York, N. Y.—Smildsin Auto Co.; capital $5,000. Corporators—K. Smildsin, 28 East 63rd street, and others.

Houston, Tex.—Overland-Houston Co.; capital $5,000; dealer. Corporators—G. W. Graham, Hugh Petter, Wallace Tyler.

Indianapolis, Ind.—Metal Auto Parts Co.; capital $50,000; to manufacture metal parts of automobiles, etc. Corporators—B. E. Thompson, W. B. Austed, G. H. Scott.

Muncie, Ind.—M. C. M. Motor Co.; capital $10,000; to manufacture automobiles. Corporators—W. H. Mathews, Luther Cobb, E. L. Morris.

New York, N. Y.—Remington Motor Sales Co.; capital $150,000; to deal in automobiles. Corporators—Philo E. Remington, 30 Church street; Carl W. Bliss, E. M. Kolstad.

New York, N. Y.—Universal Advertising Autocar Co.; capital $25,000. Corporators—Antonio DeGiorgio, 107 Broad street; Giulio J. Lusardi, Guiseppe Manara.

Rochester, N. Y.—Pritchard-Lyon Motor Co.; capital, $25,000; to manufacture automobiles. Corporators—Curtis B. Lyon, 47 Flower City Park, Paulina Pritchard, Albert R. Pritchard.

Cleveland, O.—Kelley Sales Co.; capital $10,000; to deal in automobiles and parts. Corporators—E. R. Cross, L. W. Kelley, F. T. Beaumont, D. V. Fisher, L. H. Luff.

Toledo, O.—Wight Mfg. Co.; capital $20,000, to manufacture automobile supplies. Corporators—A. V. Wight, A. C. Faulkner, George Sace, Edward Scanlon, F. E. Calkins.

Cushing, Okla.—New State Refining Co.; capital $25,000; to deal in gasolene. Corporators—T. J. Hughes, R. C. Jones, J. R. Travis, all of Cushing, and C. H. Travis, Coffeyville, Okla.

Oklahoma City, Okla.—Emma Gasolene Co.; capital $6,000; to deal in gasolene. Corporators—W. A. Ledbetter, C. E. Franke, J. H. Gauthier, all of Oklahoma City.

Columbus, O.—Capital Motor Car Co.; capital $10,000; to sell and repair cars. Corporators—E. P. Kelly, C. A. Hayes, Ira Madden, R. P. Atkinson and W. H. Eberst.

Toledo, O.—Paige-Toledo Co.; capital $20,000; to deal in all kinds of motor vehicles. Corporators—C. L. Sturtevant, J. G. Eppens, H. D. Davis, F. Hofer, Jr.; C. L. Clapp.

Pittsburgh, Pa.—Pittsburgh Motor Car Co.; capital $100,000; to manufacture automobiles and all kinds of motors. Corporators—J. M. Frere, H. J. Davis, G. Shearer.

Detroit, Mich.—Wallace Shock Absorber Co.; capital $5,000; to deal in shock absorbers. Corporators—John E. Wallace, William J. Wallace, George C. McDonald.

Brooklyn, N. Y.—Rutledge Garage; capital $10,000. Corporators—Blanche V. Foulks, James E. Foulks, Jr., 1324 Dean street; Oliver N. Sarvant.

Springfield, Ill.—National Garage; capital $5,000; to operate a garage. Corporators—H. P. Keller, Paul T. Diener and Edward A. aFirbrother.

Change of Capitalization.

Akron, O.—Miller Rubber Co.; capital increased from $1,000,000 to $2,000,000.

New York, N. Y.—Chevrolet Motor Co. of New York; $200,000 to $300,000.

Recent Losses by Fire.

Farmersville, Tex.—L. C. Bumpass; garage and machine-shop destroyed. Loss, $3,000.

Coming Events

* Indicates sanction by A. A. A.

July 30, Aug. 1-3, Galveston Beach, Tex.—Galveston Automobile Club's racemeet.*

Aug. 2-9, Grenoble—Automobile Club of France's six-day motorcycle and cyclecar reliability contest in French Alps.

Aug. first fortnight, Auvergne, France—L'Auto's Coupe de L'Auto 2½-liter race.

Aug. 16, Le Mans, France—Automobile Club de la Sarthe's Coupe Internationale light car race, 1 liter, 400 maximum cylinder area and 350 to 500 kilos weight.

Aug. 17, Le Mans, France—Automobile Club de la Sarthe's Grand Prize de France for 4½-liter cars.

Aug. 21-22, Elgin, Ill.—Road races under the auspices of the Chicago Automobile Club.*

Aug. 23, Auvergne, France—Coupe de l'Auto Race.

Aug. 27, Brooklands Track, England—Annual Automobile Race.

Aug., Russia—Road race; Coupe de l'Empereur; 2,000 miles.

Sept. 6-7, Brescia, Italy—Automobile Club of Italy's 4½-liter Grand Prize.

Sept. 7, Providence, R. I.—Track Racemeet under the auspices of F. E. Perkins.

Sept. 7-14, Indianapolis, Ind.—Automobile Show, Indianapolis Automobile Trade Association.

Sept. 10-15, Berlin, Germany—German 4½liter race.

Sept. 12, Hamline, Minn.—Minnesota State Agricultural Society's track racemeet.*

Sept. 14, Milwaukee, Wis.—Track racemeet under the auspices of the State Board of Agriculture.

Sept. 18-19, Hutchinson, Kan.—Kansas City State Fair track racemeet.

Sept. 26, Brooklands Track, England—Annual Automobile Race.

Sept. 26-Oct. 6, Berlin, Germany—Annual show.

Oct. 2-3, Oklahoma City, Okla.—Oklahoma City State Fair's track racemeet.

Oct. 2-3, Trenton, N. J.—Interstate Fair's track racemeet.

Oct. 7-17, New York City—Electric Vehicle Show.

Oct. 9, Chicago, Ill.—Speedway races.

Oct. 9-Nov. 2—S. A. E. European Trip.

Oct. 16-26, Paris, France—Annual salon.

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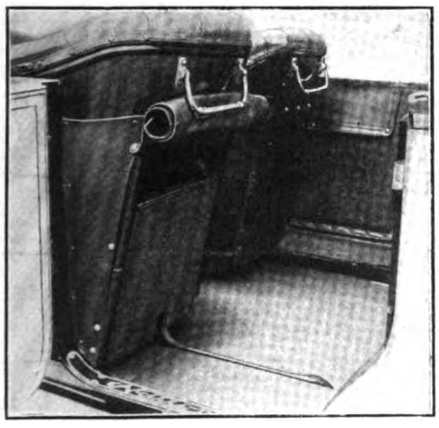
National



National Six Passenger Six, $2500

THIS new six passenger six cylinder car makes the National line complete. It is the very last word in motor car design, comfort, style, convenience and actual quality. It is a new body on the same National six cylinder chassis which mounts the popular four and five passenger bodies. The general body lines of this new car are similar to the beauty and symmetry of the famous other National Six creations. However, the body of this six passenger car is longer and larger to provide sufficient room for the additional passengers in complete comfort.

This advanced design is consistent with the National's steady and actual progress. It is another indication of the National's thoroughness and gives the National dealer additional pride in his line of cars and his factory support and enterprise. The National dealer always has the best, and has it first.

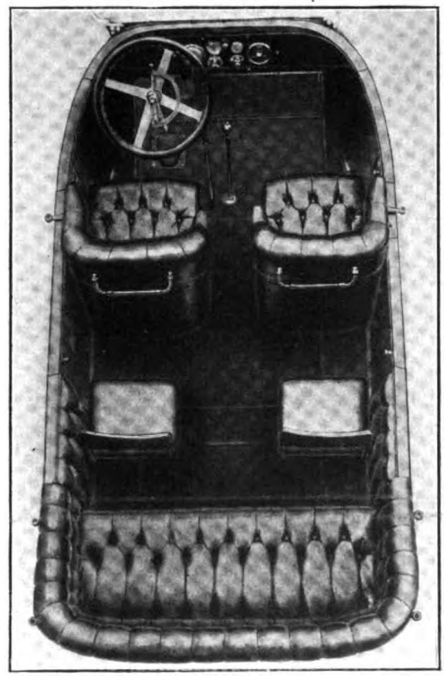


Back of Front Seat, Showing Folding Auxiliary Seats

Convenience and Comfort

On the left are the auxiliary seats folded neatly away in back of front seats. Note curtain that fastens and conceals the compartment. On right is interior of car, plan view, showing auxiliary seats firmly in position and the passage way between the two front seats. Also shows center control, left side drive, and complete and handy dash equipment.

Write for descriptive and illustrated matter on all National cars, including this Six Passenger car and the Four and Five Passenger Six Cylinder cars for $2375.



Top View of New National Body, Showing Divided Seats

NATIONAL MOTOR VEHICLE COMPANY

Indianapolis, Indiana

Builder of Stock Car Champion and American Champion

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Cable Address "MAXCO"
WESTERN UNION LIEBER'S and A.B.C. 5TH EDITION CODES.

MAXWELL MOTOR SALES CORPORATION

AUTOMOBILES

WOODWARD AND WARREN AVENUES

EXECUTIVE AND SALES OFFICE

DETROIT, MICH

June
26th
1914.

THE NEW 1915 MAXWELL "25."

EXTREMELY IMPORTANT TO DEALERS IN AUTOMOBILES.

Between July 15th and August 1st we shall announce,- place upon display and exhibit our new 1915 Maxwell "25," to retail at $750.

We shall begin the distribution throughout the country of this new 1915 "25" model by August 1st.

We confidently expect to be able to build 60,000 of these new 1915 "25" models retailing at $750. within one year.

We shall do all that human endeavor and our immense factory facilities can do to build at least 60,000.

I confidently predict that this new Maxwell "25" retailing at $750. will be the greatest sensation that the automobile world has ever known.

I base this prediction upon the car from the ground up - its chassis; its motor; the lines and size of its body; and the unexpected extra and additional features which will be placed upon this car.

Walter E. Flanders.

President,

Maxwell Motor Co., Inc.

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Imitators Are Always Behind

The imitator has no chance for first place in the race for supremacy. By the time he thinks his imitation is in the race, the originator brings out improvements and new ideas and the gap between the imitator and the imitated is never lessened.

THE WILLARD LBA BATTERY

is the originator in the Electric Starting and Lighting field.

WILLARD STORAGE BATTERY CO.

Cleveland, Ohio

New York Branch: 228-230 W. 58th St.
Chicago Branch: 2241 Michigan Ave.
Detroit Branch: 736-740 Woodward Ave.
San Francisco Branch: 821 Monadnock Bldg.
Indianapolis Branch: 318 North Illinois Ave.

SERVICE STATIONS IN ALL PRINCIPAL CITIES IN THE UNITED STATES, CANADA AND MEXICO

(109)

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MAYO RADIATORS



EVENTS have proven that more courage and ability are required to imitate Mayo quality than to copy Mayo design. Quality is the basis on which Mayo Radiators have been built and will continue to be built.

MAYO RADIATOR COMPANY

New Haven, Connecticut

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Every *Pierce-Arrow*
Every *Peerless*
Every *Lozier*
Every *Mercer*
Every *Marmon*
Every *Stutz*
Every *Chandler*



The Bosch Plug

Besides many other good cars

is shipped from its factory with Bosch Plugs,—because to give the utmost in service at an important and vital point is the desire of the high-grade manufacturers who build them.

Specifying Bosch gives you the same plug equipment, as these notably dependable cars have, or you can buy Bosch Plugs from any first-class dealer at $1.00 each. Do either and you will be satisfied.

Be Satisfied **Specify Bosch**

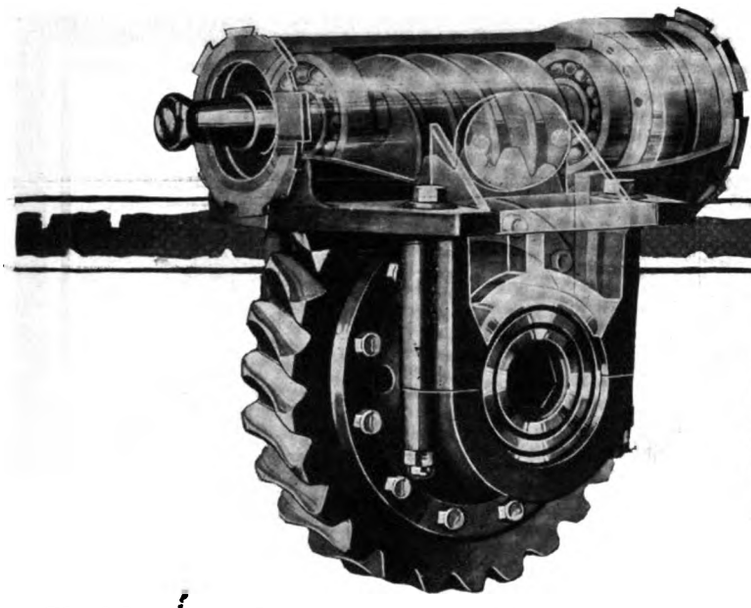
Correspondence Invited

Bosch Magneto Company, 224 W. 46th St. New York, N. Y.

239 Service Stations to Serve Bosch Users

Chicago **Detroit** **San Francisco** **Toronto**

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SHEL

Sheldon truck parts are sold only to manufacturers who will agree to use them on trucks with the carrying capacity for which such parts are designed.

Form 896—1650 Sets—5-15-14—R. P. Co. L60280

ORIGINAL—SELLER.

CONTRACT AND ORDER FOR AUTOMOBILE AXLES.

WRITE ALL DIRECTIONS ON THIS ORDER

Date_____ From _____ File No._____ To be given by File Dept.

SHELDON AXLE COMPANY
WILKES-BARRE, PENNA.

Address: _____

Please enter our order for the following material, which kindly ship as specified below:

Freight _____

This Material For Use on Buyer's Model_____

This order accepted by the SHELD_____

The buyer agrees to use the material called for in this order on trucks with a carrying capacity as given herein. Any departure from this agreement relieves the seller of all responsibility for breakage and the seller may at his option discontinue furnishing additional equipments for such trucks.

Quantity .....
Type No. .....
Track or C to C of Spokes at ground (M-88) .....
Wheel Base .....
Spring Cent___
Width___

_____ Lbs.

AR AXLES

Quantity .....
Type No. .....
Track or C to C of Sp
Spring Centers (M-88) .....
Width of Springs (M-88) .....
Are Spring Clip Holes to be drilled .....
Diameter of Spring Clips (M-88)
Size of Center Bolt Hole (M-88) .....

Rear Wheel Diameter .....
Size of Tires .....
Dual or Single .....
Are Spokes offset in Felloe .....
If so, give dimension from Felloe to C of Spokes .....

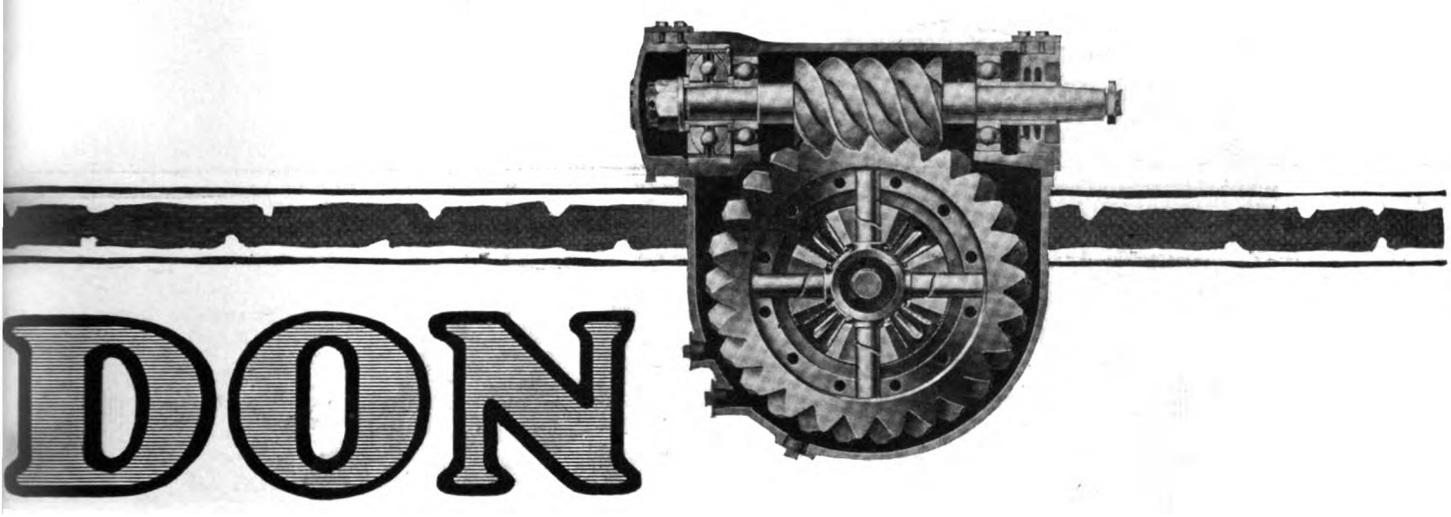
Number of Spokes .....
Width of Spokes .....
No. of Spoke Bolts .....
Number of Cylinders .....
Bore .....
Stro___
Ma___

DEAD R___

SHELDON AXLE CO.

Makers of Springs and Axles for Heavy Duty Service for More than 50 years

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This clause in our contract with truck manufacturers is your assurance of satisfaction in handling trucks which use Sheldon truck parts.

Practice

Nine-tenths of the grief which kicks back at the truck dealer is caused by over rating the working ability of trucks. Misrepresentation is hardly ever the intention, but truck manufacturers, spurred on by the exigencies of competition, sometimes lose their sense of perspective.

All throughout the design and construction of a truck a generous factor of safety is provided to take care of overloads which are bound to occur.

Truck manufacturers know that the axle maker provides a factor of safety, they also know that the motor manufacturer, the frame manufacturer, the spring manufacturer and every other manufacturer who furnishes parts, provides a factor of safety to take care of overloads. And in their anxiety to meet competition they feel safe in borrowing generously from these factors of safety and applying what they have borrowed to make the normal capacity rating of their trucks as great as possible.

When a truck manufacturer rates a truck at three tons carrying capacity to his dealers, the dealers in turn feel justified in so rating that truck to the user. So far so good, but there is always a day of reckoning.

Constantly overloading the legitimate carrying capacity of a truck means disaster sooner or later, and the truck's failure to live up to what you represented it as capable of doing kicks back at you first, then the manufacturer, then the parts maker.

Who is to Blame?

Up to this point there has been every chance in the world for conservatism. The axle maker can give no more than his axle will live up to, the truck maker can give no more than he gets from the parts maker and you can sell no more than the parts maker gave the manufacturer whose trucks you handle.

The instant the truck gets into the hand of the user, however, conservatism is thrown to the wind, and the truck often is made to carry as much as can be loaded upon it, for a great many business men believe in driving machinery to the limit, making it earn its cost as quickly as possible instead of stretching its earning power over a longer period of time.

This is what the part maker knows to be a fact, and this is what he guards against if he is as conscientious as the clause in our contract shows us to be. The whole thing is up to the truck manufacturer, especially in so far as you are concerned, and we believe you will find it greatly to your advantage to insist upon Sheldon Axle equipment, or at least upon the practical conservatism this clause in our contract insures.

Sheldon Policy

Sheldon truck parts are designed to give long life and maximum efficiency under certain conditions.

Those conditions are plainly specified in our contract with truck manufacturers. We never let our anxiety for business distort what we know to be facts.

A two ton axle is no more capable of performing the work of a three ton axle than a child is of doing the work of a full grown man. We always rate the axle made by us at a capacity we know to be safe and at that capacity that Sheldon Axles will give satisfactory service for a long period of time. It is for this reason that we require our manufacturers to agree with us—"To use the materials called for in his order on trucks with a carrying capacity as given therein."

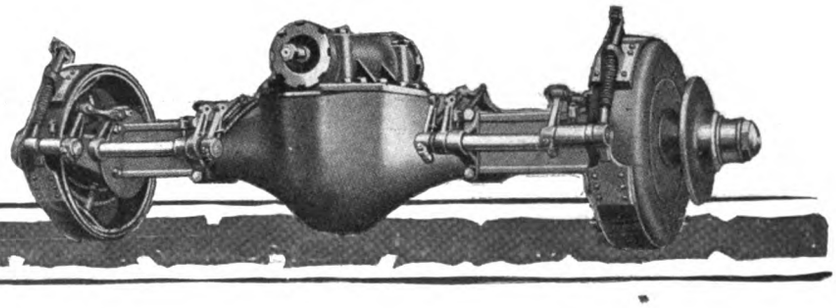
This we believe to be the most business-like clause that ever has been written into any manufacturer's contract, and it should establish a confidence on the part of everybody concerned in Sheldon Axles.

Wilkes-Barre, Pa.

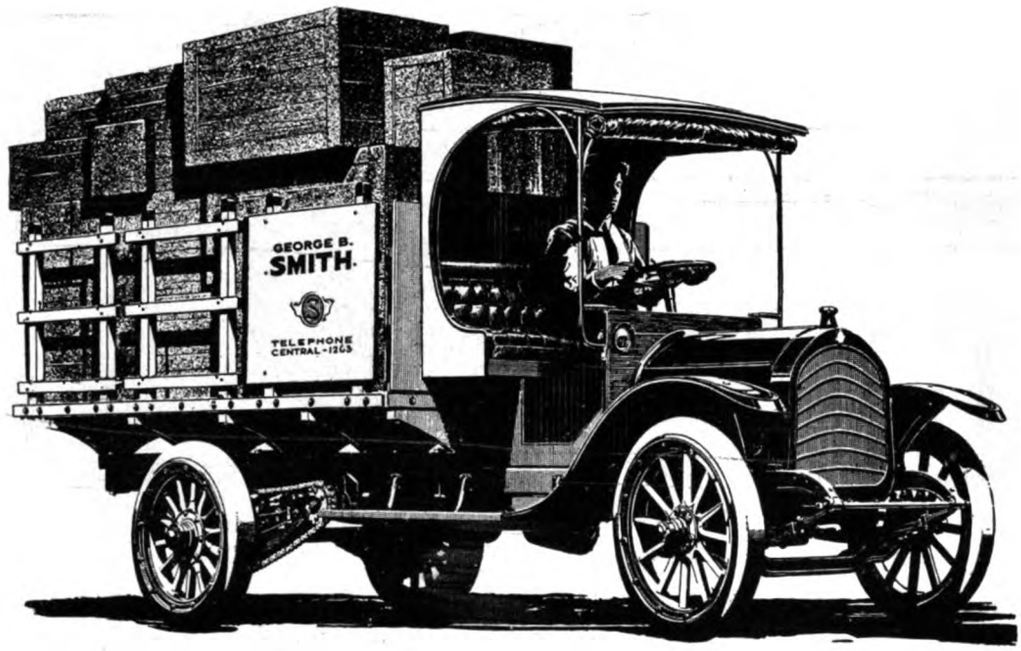
CHICAGO 122 S. Michigan Blvd:

SAN FRANCISCO 444 Market St.

DETROIT 1215 Woodward Ave.



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$1650

The Jeffery TON AND ONE HALF Truck

(CHASSIS ONLY)

BEFORE we advertised Jeffery trucks they were already in use in sixty-three different lines of business.

The Ideal of The Jeffery Company is to build the best truck at a popular price.

For several years careful buyers have been investing in Jeffery trucks. The U. S. government has bought them—so have several hundred other users.

They know the Jeffery organization, the $3,000,000 perfectly-equipped plant, the intelligent, careful engineering and production staff, the well-won Jeffery reputation. And they wanted the Jeffery truck, for they recognized it as the kind of a truck which the experience of others had proven most serviceable and satisfactory.

In a word, they saw in the Jeffery as good a truck as the best on the market and at a more attractive price.

They were right. The Jeffery is a high grade truck, designed right, built right and tested by years of real service. Compare the Jeffery $1650 1½ ton chassis with the best known truck that popular capacity and you will see very clearly that the Jeffery is easy to sell and good to buy.

The Jeffery Truck line includes the

$1650 1½ ton chassis
$1300 ¾ ton delivery chassis
$2750 2 ton quadruple drive chassis
(Drives, steers and brakes on four wheels. Will pull its load wherever one wheel can get traction. Used by U. S. army for field work. With a trailer can easily handle extra load of from two to five tons)



$1300
Chassis only

Jeffery Construction Features

Now, as we are beginning our advertising campaign on Jeffery trucks, hadn't you better look into them? We will be glad to send you a catalog.

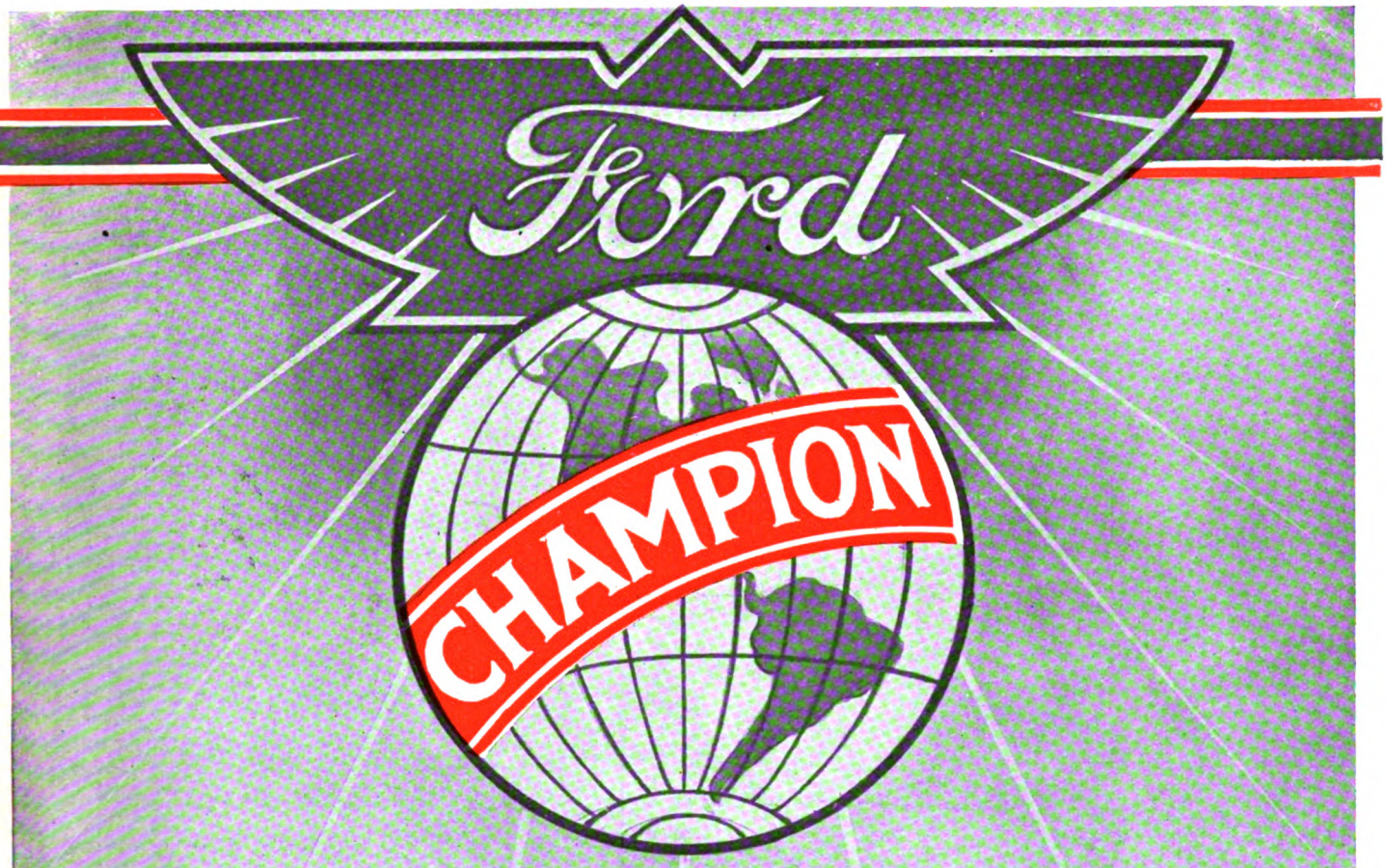
High speed, high efficiency, economical motor. Equipment complete except bodies. Complete body department furnishing bus, ambulance, police patrol, chemical hose and dump bodies. Wide factor of safety on all parts. Automatic speed governor positively controlling speed of car. Design proven by experience and the most careful, conscientious workmanship.

The Thomas B. Jeffery Company — Jeffery — Kenosha, Wis. U.S.A.

The Thomas B. Jeffery Company

Main Office and Works, Kenosha, Wisconsin

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Ford cars are famous for many reasons, chief among which is:

EXTREME DURABILITY

In the selection of spark plugs they required a device that would be highly efficient, durable in character, and uniform in quality. A plug to have that stability worthy of the Ford car.

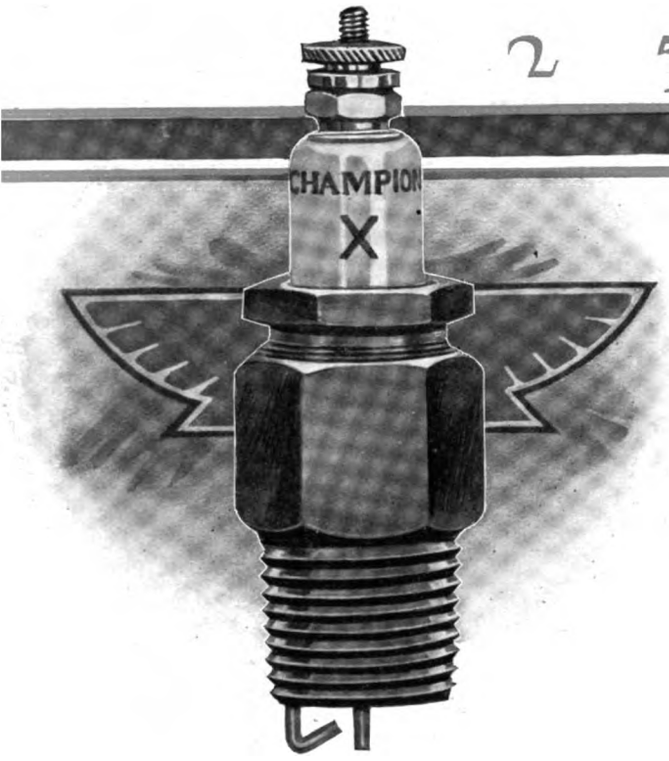
CHAMPION "X" SPARK PLUGS have been equipped to all Ford cars at the factory for the past four years, because Ford engineers, among the most careful in the world, have found that the CHAMPION "X" Plug gives the hot, snappy spark that is required to get high power from a relatively small motor.

CHAMPION SPARK PLUGS have been used in Ford equipment and by Ford owners all over the world for a period of time extending over four years. Taking into consideration the fact that we have maintained our superiority over all competition through these years, leaves no doubt as to the true worth of our product.

This is one of a long series of advertisements like this, featuring famous CHAMPION users and famous CHAMPION characteristics.

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2 5 · 0 0 0



75 Cents

No car made is a finer expression of absolute utility than the FORD and the spark plug selected by its makers must be chosen for its efficiency.

FORD CARS EQUIPPED WITH CHAMPION SPARK PLUGS CREATE THAT "GET THERE" COMBINATION, WHICH CAN'T BE BEAT.

Carload after carload of Champion "X" Plugs are shipped to the Ford factories and attached to the sturdy little Ford cars because there, of all places in the world, **absolute efficiency** is the standard.

A Word About Ford Plugs

A Ford Plug (with a red "X" marked on the porcelain) is built just like other CHAMPION Plugs. It has the standard ½" thread, manganese nickel electrodes, an unbreakable porcelain, the famous oil drip point, and is the finest example of rugged, durable efficiency producible.

We are now making five thousand of these plugs every day for the Ford Company alone, besides the many thousands produced daily for our 35,000 dealers throughout the United States who sell them to Ford owners.

There are three distinct reasons why this CHAMPION "X" Ford Plug has met with the unqualified approval of Ford owners everywhere.

FIRST: The all 'round excellence which has won CHAMPION Plugs their place on over 75% of all the cars produced in America.

SECOND: The properly designed gaskets form such a perfect contact between the carefully machined shell and porcelain and distribute the strain so evenly that porcelain breakage is practically unknown in CHAMPION Plugs.

THIRD: The famous oil drip point which has been found vastly superior in Ford motors. The Ford motor itself is good in every detail and this particular plug in its harmonious working with the motor, fulfills requirements in a manner not to be bettered.

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SPARK · PLUGS · DAILY

The Champions



½ in. Champion "X" (Ford) 75c.

There is a CHAMPION Plug for every type of motor. All sizes, styles and shapes required by the modern gasoline and gas engine have been devised by our engineers after exhaustive tests. Time after time plugs have been sent into competition with us and in every instance our product has been the final choice.

They are made in ½" standard, ⅞-18 metric with porcelain, mica or stone insulators, special electrodes and special terminals, and in various finishes.

We print a list which tells you the proper CHAMPION Plug to use in your motor. In this list you will find the names of every car and truck in use.

½ in. Champion "S" (Studebaker) $1.00





⅞—18 Champion "O" (Overland) $1.00





Long ⅞—18 Champion Regular (Buick) $1.00



½ in. ⅞—18 Metric Champion Motorcycle $1.00

⅞—18 Champion Heavy Stone $1.25





⅞—18 Champion Regular (Maxwell) $1.00

⅞ in. Champion Truck $1.00



Extra Long ⅞ in. Champion Regular (Metz) $1.00

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Millsboro, Del., April 30th, 1914.

CHAMPION SPARK PLUG COMPANY,

Toledo, Ohio.

Gentlemen:-

We recommend and use CHAMPION "X" SPARK PLUGS in the Ford cars because we get better results.

A few days ago one of our customers was here with his Ford car, and it was impossible to get perfect ignition.

The writer's attention was called to this fact, and on raising the hood, we found that our customer had removed the CHAMPION PLUGS and substituted another make. I told my customer that my experience had taught me to use CHAMPION "X" PLUGS. I was instructed to replace the plugs he had in the car by CHAMPION "X" PLUGS, and a nicer motor was never built than this one after we had put in the right plugs.

Very respectfully,

Burton & Lingo

(Signed) Fred. H. Burton.



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METZ WINS AGAIN

GLOBE—JULY 26, 1914.

AUTO RACES VIEWED BY 10,000 PERSONS

Metz Defeats Mercer in Two-Mile Handicap.

Montreal Driver Makes Track Record of 1:24 1-4 at Springfield.

SPRINGFIELD, July 25—Fully 10,000 persons witnessed the amateur auto races held this afternoon at Imperial Park.

One of the most interesting races of the day was when the small Metz stock runabout, driven by Barrett, competed with the large Mercer, driven by Brainard. The Metz was given a handicap of 100 yards, but as the Mercer was a powerful machine and had won other races during the day there seemed no doubt that it would speedily overtake its rival. The little car stuck to it and won the two-mile race in 3m 7 2-5s.

The motorcycle races drew a lot of interest and hard fights were put up between the two crack drivers, Kelley and Cario. Monroe, who also participated in these events, broke his machine earlier in the day and did not try to make any new records.

The three-mile race between the National, Mercer and Knox cars started with the Mercer leading, but the National being pushed hard passed it shortly, and holding the pace received the checkered flag as the winner The Mercer lost on the curves

The summary.

First Auto Race (Three Miles), Fly

From the Boston Globe 7/26/'14 issue

Reliability Always— Speed When You Want It

The unbroken series of demonstrations of METZ RELIABILITY was capped by the METZ winning the last (1913) Glidden Tour.

SPEED—Last Saturday, at Springfield, on a circular track,

METZ STOCK RUNABOUT

won a two mile race against a car recognized to be one of the speediest of all American cars —time, 3 m. 7 2-5 s.

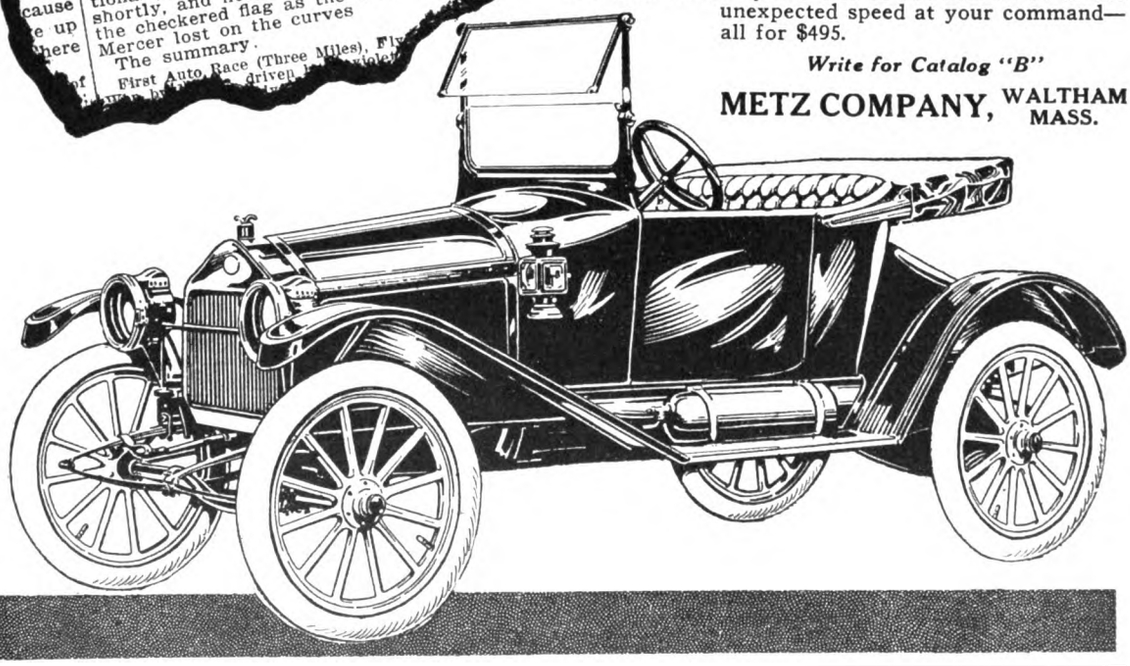
Not only Reliability for tours and Speed for racing, but the combination of both enabled the METZ to win the famous Uniontown, Pa., hill climb against a field of thirteen of the most powerful cars both foreign and American makes.

Better look into the advantages one of these light, economical running, reliable METZ cars offer.

You will be as much surprised at the kind of service and reliability there is in the METZ as at the unexpected speed at your command—all for $495.

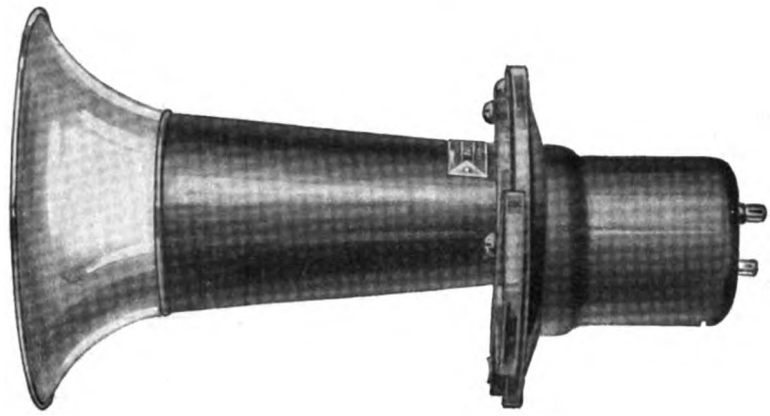
Write for Catalog "B"

METZ COMPANY, WALTHAM MASS.



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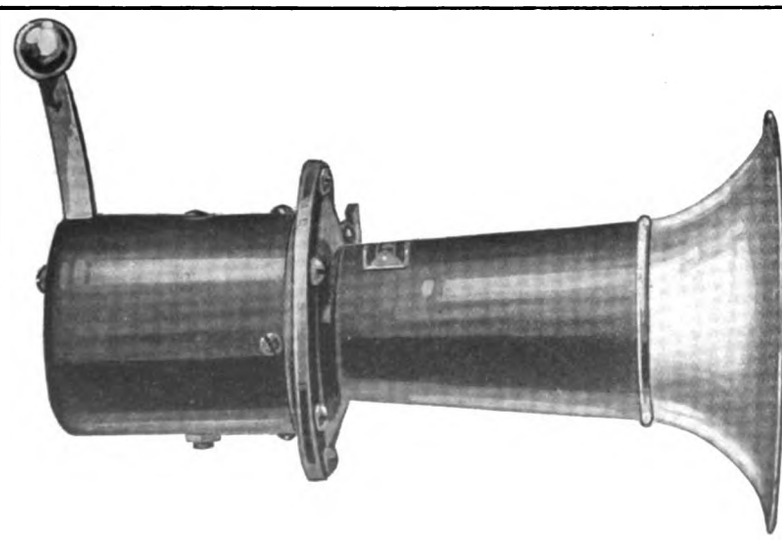
$9.50 to $15.00

SPARTON

Electric Motor Driven and Hand Operated Signal

The motorist cannot afford to depend on a good enough warning signal. When the time comes for action, he must have a horn that will compel quick, unthinking, instantaneous jumping—such is the discordant, action-compelling growl of the SPARTON when the button is pushed home. On country stretches a good pressure on the button produces a warning clarion that can be heard a mile down the road, giving everyone time to get out of the way. On city streets a light touch produces an inoffensive, but authoritative command, warning people at close range.

Hand Operated $7.00 and $8.00

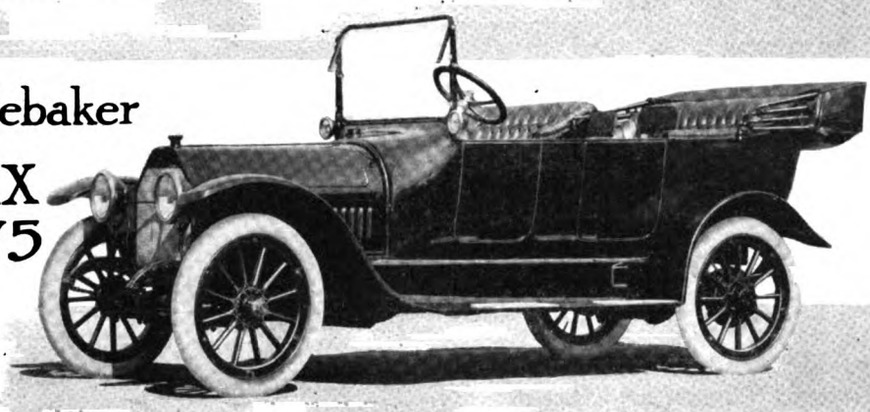


Hand Operated $7.00 and $8.00

The Sparks-Withington Co., Jackson, Mich.

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Studebaker
SIX
$1575



Studebaker

ANY Studebaker dealer will tell you that there are 247 drop forgings in the Studebaker SIX—and that these strength-giving drop forgings are made in the Studebaker drop forge plant, the largest and most complete in the motor car industry.

He will tell you, too, that this is but one of Studebaker's many superiorities.

For every Studebaker dealer is proud of the fact that Studebaker has the most wonderful equipment known to automobile manufacture; and manufactures a greater proportion of its parts than any other motor car maker in the world.

Motor car value depends on the extent of motor car manufacture, because assembling is essentially unscientific and costly.

That is why the Studebaker dealer KNOWS that he has the biggest motor car values on the market.

STUDEBAKER - Detroit

F. O. B. Detroit

FOUR Touring Car	$1050	*SIX Touring Car*	$1575
FOUR Delivery Car	1150	*SIX Landau Roadster* . .	1800
SIX Sedan	$2250		

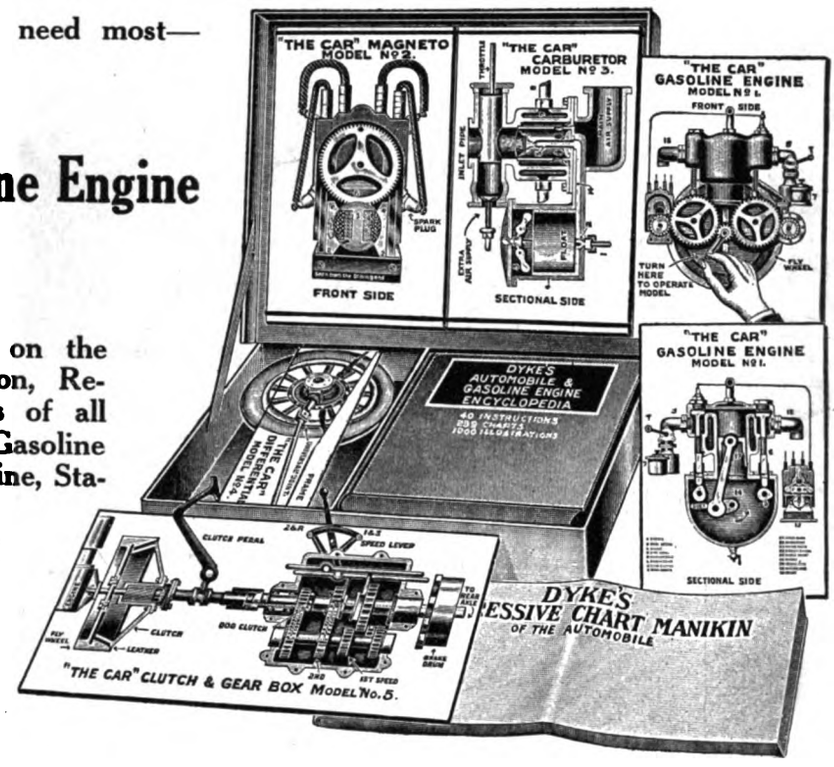
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Here it is—just the thing you need most—

Dyke's Automobile & Gasoline Engine Instructor

A Practical Instructor treating on the Principle, Construction, Operation, Repairing, Troubles and Remedies of all Automobiles and all types of Gasoline Engines: Auto, Motorcycle, Marine, Stationary and Aero.

A NEW IDEA invented by A. L. Dyke, the originator of the first automobile supply business and publisher of the first practical book on automobiles in America. Endorsed by Lord Montagu, the leading motor authority of England, and Chas. Duryea, Chas. Splitdorf and others. Simple, Thorough, Practical. Prepared for the NOVICE, but a handy guide and reference for the EXPERT.



Dyke's Automobile & Gasoline Engine Instructor. Price $8.50

DESCRIPTION

ON THE WORKING MODELS YOU GET THE ACTUAL PRACTICE, see the actual INSIDE operation and learn the principle. The Instructions then explain and illustrate the variance in construction of the different parts in general use.

With these Models you learn more than you could from the real part itself because you see the inside operation—something impossible with the real part.

THE MODELS OPERATE BY HAND, ALL MOVING PARTS MADE OF REAL METAL. There are two sides to three of the models.

ON THE No. 1 ENGINE MODEL you learn the principle, then valve operation and how to set the valves. The same applies to all other models.

THE PROGRESSIVE CHART MANIKIN EXPLAINS WITH LARGE PROGRESSIVE DRAWINGS HOW THE AUTOMOBILE IS BUILT FROM THE GROUND UP; First the springs are mounted on the axles, then the frame on the springs, then the power plant on the frame, then the transmission and drive system, and so on until the car is completed. Key numbers of parts are referred to throughout the instructions.

THE ENCYCLOPEDIA contains 560 pages, 239 Charts and over 1000 Illustrations. It is divided into forty instructions, as follows:

> Assembly of the Car, Drives, Steering Springs & Brakes, Axles & Differentials, Clutches, Transmission or Change Gears, The Gasoline Engine, Engine Parts, Valve Timing, How Cylinders Fire, Two Cycle, Carburetion, Self Starters, Electric Ignition, Low Tension Coil, High Tension Coil, Wiring, Ignition, Timing, Various Ignition Systems, Low Tension Magneto, High Tension Magneto, Magneto Principle, Magneto Wiring, Magnetos Setting & Troubles, Storage Batteries, Lighting a Car, Cooling, Lubrication, Operating a Car, Rules of the Road, Care of the Car, Tires, Vulcanizing, Building a Garage & Repair Shop, Equipment, Tools, Use of Tools, Repairs & Adjustments, Digest of Troubles, Diagnosis & Remedies, Insurance, Laws, Horsepower, Tables, Measurements, Steam Car, Air Crafts, Pointers for Automobile Salesmen, Dictionary, Index.

EACH AND EVERY SUBJECT IS COVERED IN DETAIL WITH CLEAR ILLUSTRATIONS AND SIMPLE EXPLANATIONS—for instance: The Engine Subject covers all engines from 1 to 8 cylinder, explains the different valve systems and cylinders and crank shafts.

THE CARBURETION SUBJECT covers, first the principle of Carburetion, then the different constructions, and finally ends with clear detail rules for adjusting all leading carburetors.

THE ADJUSTMENT AND REPAIR INSTRUCTION is probably the most interesting. The subject of repairing begins with cleaning a car; cleaning carbon, chemically and mechanically; grinding valves; testing compression; taking up lost motion in valve stems and plungers; setting valves and timing the ignition; how to set all leading magnetos; scraping bearings; how to test for knocks and how to locate them; meshing the timing gears; fitting piston rings; carburetor repairs and adjustments; rewiring a car; ignition troubles and remedies; timer troubles and remedies; cooling troubles—how to clean and repair radiators; how to take up wear in differential; how to adjust the steering device; how to treat the clutch; lining up wheels, etc. In fact, every adjustment needed on a car is explained and fully illustrated.

THE INSTRUCTION ON SALESMANSHIP gives many pointers to the auto salesman in the way of advantages and disadvantages of different systems of ignition, carburetion, engines, etc.

THE INDEX AND THE DIGEST OF TROUBLES—With this Index the reader can find any trouble the auto is heir to, then turn to the Digest of Troubles and learn the cause and remedy, and then turn to the Repair Section and see how to repair it, or turn to the instruction and learn the principle and construction.

VALUE OF THIS INSTRUCTOR TO YOU. It will train you to become:

> (1) AN ENGINE EXPERT capable of diagnosing ignition, carburetion, valve timing, cooling troubles, and remedying them.
> (2) A DIAGNOSIST—who from knowing the principle and construction of all these subjects can instantly tell the cause of any trouble and apply the remedy.
> (3) A RUNNING GEAR EXPERT capable of diagnosing and remedying such troubles as differential, transmission, axles, brakes, steering wheels and axle troubles.
> (4) AN AUTO MECHANICIAN who can adjust and remedy all the troubles after diagnosing—the subject of repairing in this Instructor is complete in every respect.

YOU CAN'T AFFORD TO BE WITHOUT DYKE'S AUTOMOBILE AND GASOLINE INSTRUCTOR.

THE INSTRUCTOR CONSISTS OF:

> 5 Working Models
> Progressive Chart Manikin
> Book—Dyke's Automobile and Gasoline Engine Encyclopedia.

PRICE of the Dyke Automobile and Gasoline Engine INSTRUCTOR, as shown above, complete in a special box—$8.50. (Add 60c. if wanted prepaid.)

NOTE:—The Book—Dyke's Automobile and Gasoline Engine ENCYCLOPEDIA can be purchased separately, if desired. Price —$3.00. (Add 25c. if wanted prepaid.)

NOTE:—THE 5 WORKING MODELS can be purchased separately from the Instructor, but in sets of 5 only. Price for the five—$5.75. (Add 48c. if wanted prepaid.)

BOOK DEPARTMENT **MOTOR WORLD** 231 West 39th St. NEW YORK CITY

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THE Thomas B. Jeffery Company is devoting itself to the production of motor cars most modern in their mechanical superiority—unexcelled in quality and quite distinctive in up-to-the-minute style and beauty.

The success of the Jeffery Four, the first high grade, light weight, economical car of quality, to be sold in America at a moderate price has enthroned this car as a leader among Fours.

Its distinguished companion, the Jeffery Chesterfield Six, will, through the possession of the same inherent quality, naturally command the same position among Sixes.

It would not be possible for the Jeffery Company to maintain this leadership through adherence to the old annual model policy.

It is the purpose instead to give Jeffery owners the best motor car we can possibly build with complete disregard of all prejudices of engineering design or selling practice.

The Thomas B. Jeffery Company



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The Jeffery Chesterfield Six

The Distinguished Companion of the Jeffery Four

IT has been the prediction of the best automobile dealers throughout the country since the successful conquest of the American market last year by the Jeffery Four, that Jeffery would develop the leading car in the economical six cylinder field. The Jeffery Chesterfield Six is that car. It has been designed and named for quality and style leadership.

It is perfectly logical that the same splendid manufacturing organization which developed America's first high-grade economical four cylinder car of distinctive beauty and comfort, the same engineering brains with the proven experience of Europe at its command, should develop the leading car in the economical six cylinder field. Jeffery has frankly made an effort in the Chesterfield Six to command the admiration of people of good taste—those who do not hesitate to enjoy quality even though it can be had at a moderate price.

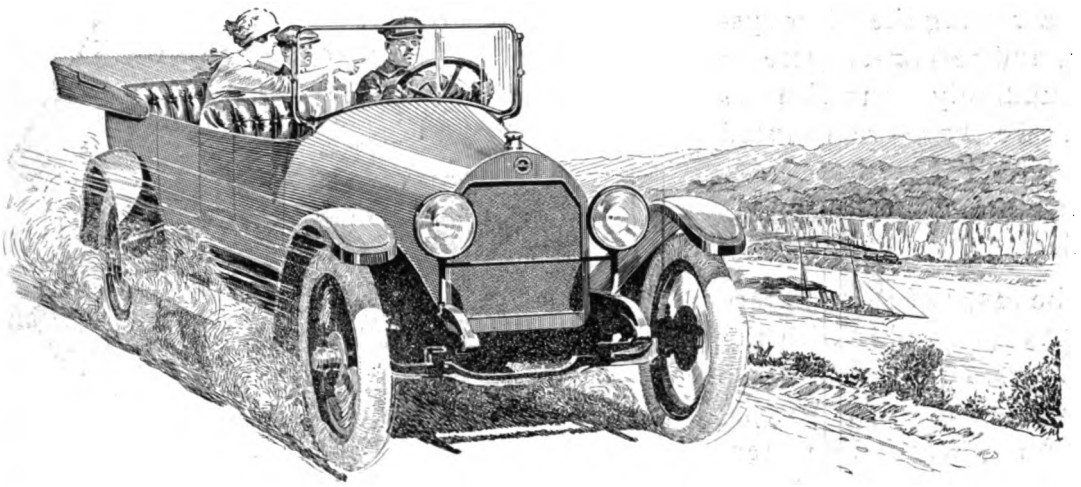
The kind of a man who demands a light six for economy will be careful enough not to buy a six that is light in quality also, even at a difference of a couple of hundred dollars. One Jeffery feature alone, the worm drive, is worth that difference.

A canvass of our best dealers resulted in the unanimous expression, "Put into the Jeffery Chesterfield Six the same elements of high-grade quality, distinctive beauty, comfort, economy and freedom from mechanical troubles which you put into the Jeffery Four, and it makes no difference to us if the price is somewhat higher than other so-called light sixes, because the public knows now what Jeffery quality means."

The motor of the Jeffery Chesterfield Six is of the high-speed, high-efficiency, bloc type, developing 35-42 horse power. It was just such a motor as was specified as the power plant of the ideal car by the Society of Automobile Engineers at their last convention.



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The Jeffery Chesterfield Six

The motor weighs but 397 pounds—think of it. Light, economical, and with a wealth of reserve power, its bore and stroke is but 3x5 inches.

So perfect is the balance of the motor that it is actually difficult to say whether or not it is running when the car stands at the curb with the motor running idle.

It is a motor such as the dealer delights in demonstrating, because it purrs quietly, gets away with snap at a touch of the throttle, will send the car shooting along the road at fifty miles an hour if desired, or snake it through a crowded street at three.

Its remarkable flexibility and continuous pull eliminate all unnecessary gear shifting among congested traffic or on the hills.

The reciprocating parts are of such high quality that their weight has been reduced to a point of marvelous efficiency. The pistons weigh about a pound. All moving parts are perfectly lubricated by combined constant level splash and gravity feed system operated by Vane pump. Oil is fed to all bearings by individual leads.

The *valves* are the famous Rich Tungsten steel, heat tested, which require no grinding or further attention.

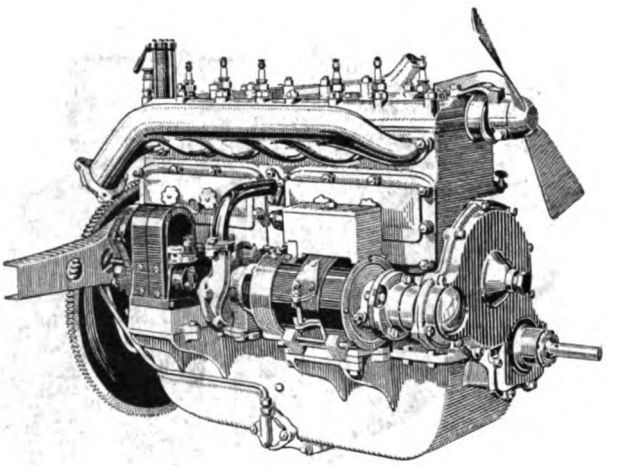
In the selection of the *starting and lighting system* all prejudices of common usage, price or popular reputation were disregarded in our desire to make this unit, like all others, balance harmoniously with the size, speed, piston and fly wheel weight, and compression of the motor.

The Bijur two unit system was selected after exhaustive tests, but before its adoption we endeavored, as far as possible, to look a year ahead, and anticipate any possible weaknesses which actual services might develop.



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To that end we corresponded with every dealer of a car using the Bijur system, and responses were so astoundingly unanimous that we have reproduced and bound these letters for distribution among our dealers.



Motor

The tenor of these letters is, "As for trouble with the Bijur system, you will never know that it is on the car. As for never-failing performance, you can always bank that it is there." In designing and building a style carriage, it is quite natural that silence should be considered a prime factor.

To that end we have pioneered in the use of the worm drive rear axle, which is being adopted by the builders of the highest grade electric pleasure vehicles.

Worm gear is not only quieter, but more powerful than the old bevel gear now in use on other cars. Once properly mounted, the gear requires no adjustments (simply oil) as long as the car lasts.

The car starts more easily with the absence of that jerk which annoys the passenger and destroys the tread of the tire.

The worm gear is also a gasoline saver and beautifully supplements the efficiency of the light running six cylinder motor by reason of its continuous pull.

Sixty-five per cent of the English cars use the worm gear drive, and many of the highest grade French cars, such as DeDion Bouton.

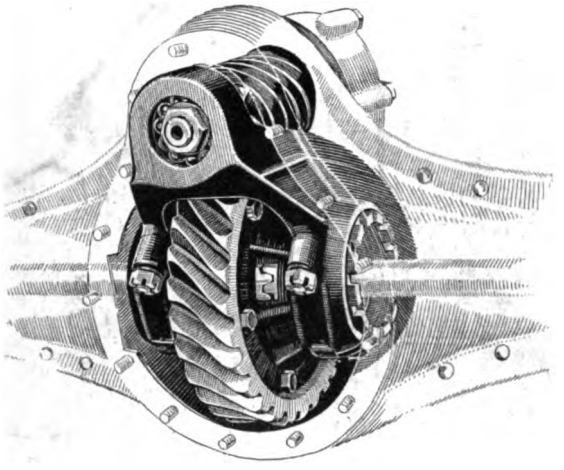
The worm is made from case hardened, open hearth steel, imported from Sheffield, England.

A clutch requiring frequent adjustment to prevent its slipping, sticking or heating frequently destroys the satisfaction in the operation of a beautifully balanced motor in some cars.

In order that we might rightfully christen the Jeffery Chesterfield Six the "Carefree car of quality" we have employed the trouble proof three plate dry disc clutch, in which we found the quality and operating efficiency which would work in harmony with this wonderful motor.

The clutch can be "let in" instantly on high gear with no stuttering or grabbing nor starting jerk, and any working wear can be taken up by a novice in two or three minutes with an ordinary wrench.

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Worm Drive Rear Axle

The Chesterfield is a full French streamline body, resembling closely those distinctive foreign types of cars exhibited at the shows abroad and at the New York Salon.

The color is Chesterfield blue. There is no car on the American market today that even resembles it. The owner of the Jeffery Chesterfield Six is, therefore, immediately recognized as a man of refined taste and one who is not satisfied to have his car resemble in its outward appearance the lines of the cars of all of his neighbors.

We know that a greater percentage of women will drive the Jeffery Chesterfield Six than have ever before driven any Jeffery car. That being the case, we realized that the *transmission* must offer a flexibility of control and ease of operation effectually doing away with the tugging at control levers and the clashing of gears at all times. That we have accomplished effectually in the Jeffery four-speed and reverse, selective sliding gear transmission. We cut our own gears from chrome nickeled steel, heat treated and oil-tempered. We are proud of the job.

We continue to use *Spicer Universals*, a direct drive shaft of Chrome nickeled steel and imported annular ball-bearings, taken together with the other equally high-grade units, these are the ear marks of a car of quality.

The Chesterfield *body* lives up to its name in every detail. It should not be confused with the conventional stream line bodies used in varying forms by the average American car.

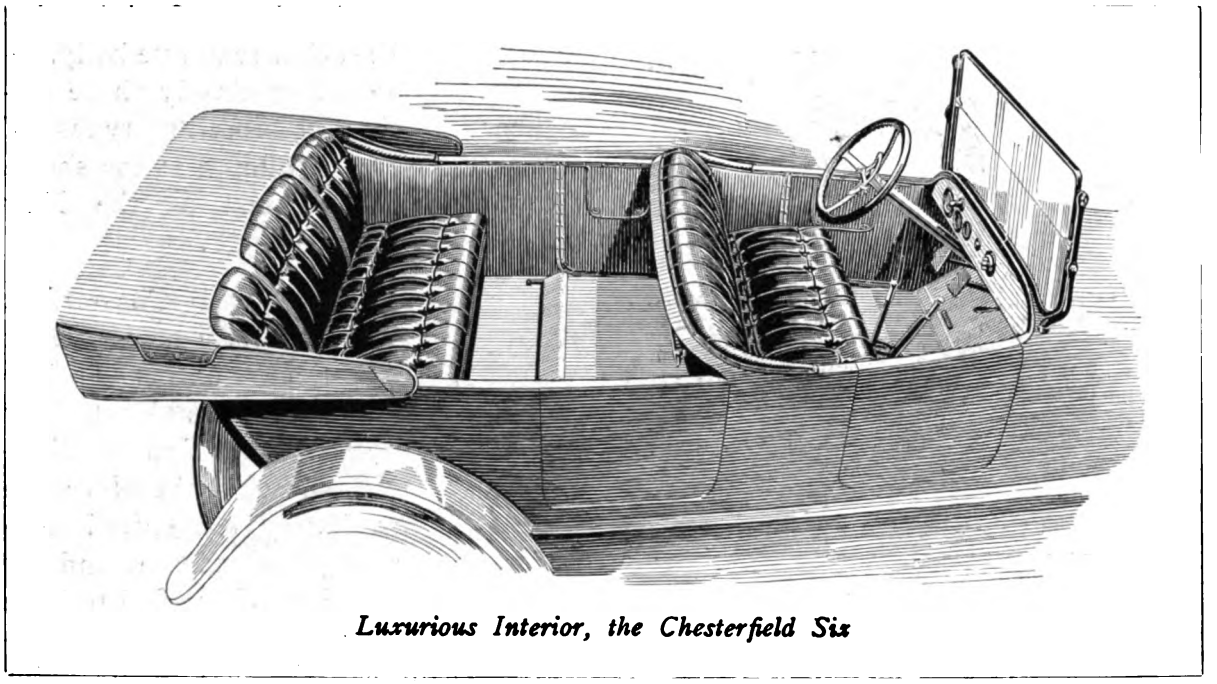
There is not a single straight line nor angle in the entire design. No projecting spring bolts and grease cups mar the clean, simple sweep of the lower body lines, because the spring bolts are self-oiling, and therefore require no grease cups.

The interior of the body incorporates many of the refining elements to be found in the best American and foreign cars, without consideration for the passing fads and fancies.

The salesman who has found it hard to sell a car, careless in detail, to a woman of discriminating taste, can best appreciate the careful attention to little things, such as the harmony of the carpet, the robe rail, foot rest, trimming of the upholstery, and the arrangement of the instrument board which distinguish the Jeffery Chesterfield Six.



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Luxurious Interior, the Chesterfield Six

A style carriage must ride comfortably. The Chesterfield Six is a car designed for long country drives as well as city use.

That is why you will find cantilever springs used, and upholstery which is not only heavy and luxurious, but so shaped as to give restful support to the passenger's body where it most needs support.

The fenders are crowned and stamped from one piece of metal of sufficient weight to eliminate all vibration.

The gasoline tank is cylindrical and seamless, and is carried in the rear.

The car is light in weight—2850 pounds, as shipped—but heavy in quality. The equipment leaves nothing to be desired.

As was anticipated throughout the trade, the now famous Jeffery Four will be continued without change, except the price, which is now $1450.

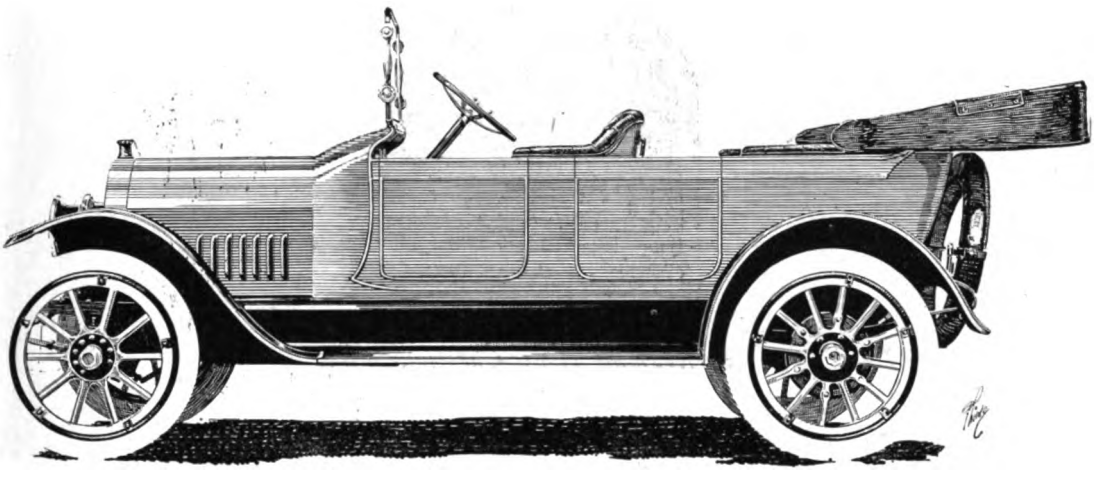
This car which changed entirely the trend of motor car design in this country, embodies practically everything which the best designing engineers of Europe and America have said should constitute an ideal four cylinder motor car.

The Jeffery Four of the future will only surpass the Jeffery Four of the past in the same measure that any manufactured product can be made better and more economically in a big, well equipped plant, after it has been produced for a year or so.

The same light, high-speed, high-efficiency, foreign type of motor will be used. The car will be started and lighted by the U. S. L. System. Bosch Duplex ignition, Rayfield Carburetor, imported annular ball-bearings, four



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The Now Famous Jeffery Four

speed transmission, Spicer Universals and Daimler leather couplings will be incorporated as heretofore.

Complete specifications and equipment will be found on another page.

Those who are not familiar with the elements which have made the Jeffery Four a popular leader will readily understand after analyzing these specifications why this car will continue to command supremacy this season.

They will recognize in it an astounding value for the man who prefers a four cylinder car, who demands economy, and who is not satisfied with a car whose lack of quality, comfort and style marks him as unable to enjoy those necessary elements in motoring satisfaction when they can be had as low as $1450.

The Jeffery Big Six is built for the man who wants a larger car than the Chesterfield Six, but who insists upon identifying himself among his friends as demanding Jeffery quality.

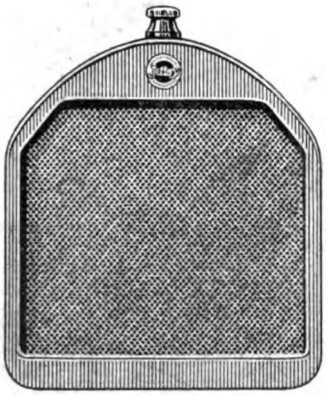
This car, with Chesterfield seven passenger body, sells for $2400, and is the biggest Twenty-four hundred dollars' worth of motor car on the market today.

In its class it represents all that the Jeffery Four and Jeffery Chesterfield Six stand for in their respective fields.

Its power plant is a 48 H.P. high speed, high-efficiency motor, whose cylinders are cast in pairs, and all of the essential specifications of the Four are incorporated.

The car has a wheel base of 128 inches and weighs 3700 pounds with full equipment.

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The Radiator of the Chesterfield Six

Specifications

Chesterfield Six

High-speed, high-efficiency, L head, six cylinder, bloc type motor, 3 x 5, weight 397 pounds, 35-42 horsepower.

Full floating, worm drive rear axle. Imported annular ball-bearings throughout, except front axle, which are of chrome nickel taper roller type.

Bijur two unit starting and lighting system.

Four speed and reverse, selective sliding gear transmission. Left drive, center control. Three plate dry disc clutch. Bosch ignition, magneto, cables and plugs. Lubrication, combined constant level splash and gravity feed, operated by a Vane pump. Cantilever springs, two sets internal expanding brakes, Rich tungsten steel valves, Spicer universals, Daimler leather couplings, honeycomb radiator of European design, Gemmer steering gear, Rayfield carbureter, cylindrical seamless gasoline tank in rear with Stewart vacuum feed to carbureter.

122-inch wheel base, weight 2850 pounds as shipped, demountable rims, 34x4 tires, Chesterfield full French streamline body, finished in Chesterfield blue. Crowned fenders.

EQUIPMENT — One-man top, Collins curtains, rain vision ventilating wind shield, robe rail and foot rest. Extra demountable rim with carrier. Klaxet horn under hood. Solar lamps, motor driven tire pump, Stewart-Warner speedometer with enclosed Empico drive, through steering knuckle and axle shaft. Ammeter, exploring lamp, pump, jack and full set of tools.

Prices F. O. B. Kenosha, Wis.: Five passenger touring, or two passenger Roadster, $1650. Two passenger all weather car, $1950. Chassis only, $1350.

Jeffery Four Features

High-speed, high-efficiency four cylinder motor cast en bloc, 3¾ x 5¼—38 H. P. U. S. L. starting and lighting system; imported annular ball bearings; full floating rear axle; four speed and reverse transmission; force feed and splash lubrication; Bosch duplex ignition, Rayfield carburetor; Rich Tungsten steel valves; cone clutch; Spicer universals; Daimler leather couplings; vanadium steel parts; left drive, center control. Wheel base, 116 inches; weight, 2850 pounds. Tires, 34x4 inches.

Dealers

Successful dealers want to become associated with a financially strong and successful organization. Already many of the best known dealers in the country who have been selling the popular high priced cars have been to the factory to look over the Jeffery Chesterfield Six on the strength of rumors which had reached their ears. Unanimously these men who have had years of experience in studying the trend of public demand see in the Jeffery line the foundation of a big, successful business. Each and every one of them have asked for territory.

Wire your reservation and at the same time if possible say when you will be at the factory. A beautiful poster is ready for dealers and a booklet for everybody.

The Thomas B. Jeffery Company

Main Office and Works, Kenosha, Wisconsin



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We Want a Live Dealer

WE want a dealer who is live enough to see that almost *every* car owner in his vicinity is a possible customer for a Stewart Tire Pump. (It doesn't make any difference which *car* you are selling.)

Just now there is a tremendous "run" on pumps. The demand for a tire pump that goes right on the motor and is operated by the motor is growing by leaps and spurts every day. It won't be long before almost every single car owner has bought such a pump. They all know that a hand-pump can never put enough pressure in a tire—and unless you get the *right* pressure, then your tires wear twice as quickly. This is why they are all stampeding for the Stewart Tire Pump.

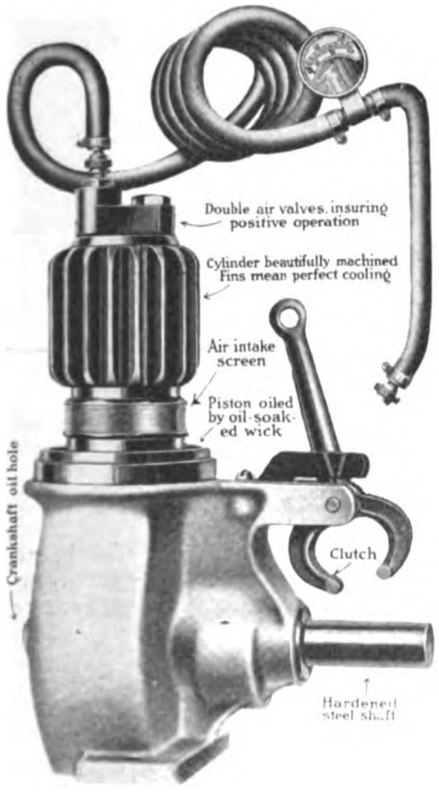
The livest dealers in most all localities have hooked up with the Stewart Tire Pump because they saw it was the best pump and at the best price. They were the far-sighted ones and have already made big money on sales and installations. Car owners are coming their way.

Are *you* a live enough dealer for this proposition? Don't lose time. Someone is going to sell a great many Stewart Tire Pumps in your locality. Get all this business and profit for yourself.

The Stewart is the best and most efficient tire pump on the market — bar none. The piston and connecting rod are steel, the base is aluminum; the cylinder is beautifully finished, with fins for perfect air cooling. Piston is oiled by rubbing against a wick upon which oil is dropped from outside. No rubber nor leather packings to wear and cause leakage. Price,

with air-pressure gauge and 13 feet of high-grade hose, complete with bracket and gears to install on car, only - - - **$15**

When ordering, give name, year and model of car the pump is wanted for.



Stewart Tire Pump, with complete fittings for immediate installation, may be had for the following cars (this list is being added to almost daily):—

CAR	MODEL	YEAR
Abbott Detroit	35	1914
Abbott Detroit	44-50	1914
Abbott Detroit	6-Cyl.	1914
Auburn		1914
Buick	24 & 25	1913-14
Buick	24 & 25	1914
Buick	Big Six	1915
Cadillac		1913
Cadillac		1914
Case	40	1914
Case	25	1914
Case	35	
Chalmers Little Six	—26	1914
Chalmers Big Six	—6-60-24	1914
Cole	4-Cyl.	1913
Cole	6-Cyl.	1914
Cole	4-Cyl.	1914-15
Cartercar	5A	1913
Cartercar	5A	1914
Cartercar	7	1914
Ford		
Hudson	6-40	1914
Hudson	6-54	1914
Havers Six		1913
Jeffery	4	1914
Lexington Howard	4	1914
Lexington Howard	6	1914
Maxwell	25	1914
Maxwell	35	1914
Maxwell	6	1914
Mitchell	6	1913
Mitchell	Baby Six	1912

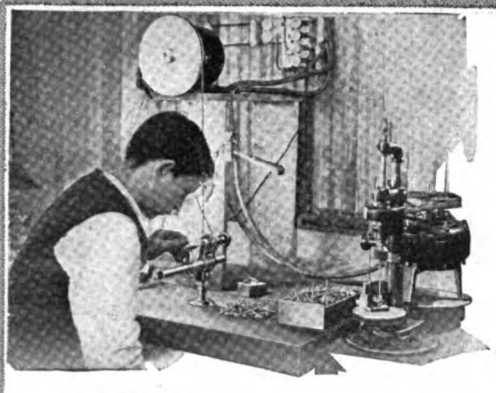
CAR	MODEL	YEAR
Oakland	35	1914
Oakland	6-60	1913-14
Oakland	42	1913
Oldsmobile	6	1914
Oldsmobile	42-4	1914
Overland	79	1914
Overland	71	1913
Overland	69	1913
Packard	1-38	1914
Packard	3-48	1914
Packard	30	1908
Packard	30	1909
Packard	30	1910
Packard	30	1911
Packard	30	1912
Paige	36	1914
Pathfinder		1913
Pathfinder		1914
Rambler	Cross Country	1913
Reo	The Fifth	1911
Reo	" "	1912
Reo	" "	1913
Reo	" "	1914
Studebaker (EMF)	4-30	1912
Studebaker (EMF)	4-20	1912
Studebaker	4 & 6 Cyl.	1913
Studebaker	4 & 6 Cyl.	1914
Westcott	4-40	1912
Westcott	4-40	1913
Westcott	0-30	1914
Westcott	0-30	1915

Stewart-Warner Speedometer Corporation

Executive Offices: 1958 Diversey Blvd. Chicago
Factories: Chicago and Beloit, Wisc.

17 Branches. Service Stations in all cities and large towns

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THE recent victory of the Zenith in the German War Office Benzol tests proves its all round efficiency. The fact that more than 150 of the best known cars in Europe are Zenith equipped proves its popularity. The new catalog explains the reason why. Send for it.

Fine Tools for Fine Work

IN the fine work necessary in drilling holes through Zenith spraying nozzles great care is required for accuracy and uniform results.

The first important operation is centering the jet. For this purpose a high speed jeweler's lathe is employed. Each center is carefully spotted for the next operation of drilling.

A very sensitive drill, shown on the right of the accompanying illustration, completes the operation. The diameter of the jet means much for results. Not only great care governs these two operations but they are merely the fore runners of the "Water Cure" tests which follow. Eternal vigilance has built up the Zenith reputation.

ZENITH CARBURETOR CO. DETROIT, MICH.

New Departure Ball Bearings



A Fair Question Deserves a Fair Reply

In designing your next car, the question of bearing equipment will, of course, receive the serious consideration so important a question deserves.

In all fairness, New Departure ball bearings more than answer that question.

It is a bearing of guaranteed quality including high grade materials, accuracy of finish, and uniformity of dimension. It is the product of an American factory with ample capacity for prompt and complete deliveries without liability of troublesome delays such as are sometimes experienced by manufacturers who buy their bearings abroad.

Why not give New Departures a thorough tryout?

A line from you will bring our literature and representative. May we send either or both and inform you fully of our proposition?

The New Departure Manufacturing Co., Bristol, Conn.

Western Branch, 1016-17 Ford Building, Detroit, Mich.

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EISEMANN

It isn't alone the quality of materials and workmanship that makes for the superiority of the special Eisemann system for Ford cars, for the cleverness of design that makes the system so simple and so easy to install is also of fundamental importance in the excellency of the unit.

In this connection it should be borne in mind that the most inexperienced mechanic or Ford owner can install the Eisemann system with ease and celerity. There is nothing complicated about the work nor are there any changes to be made in the car.

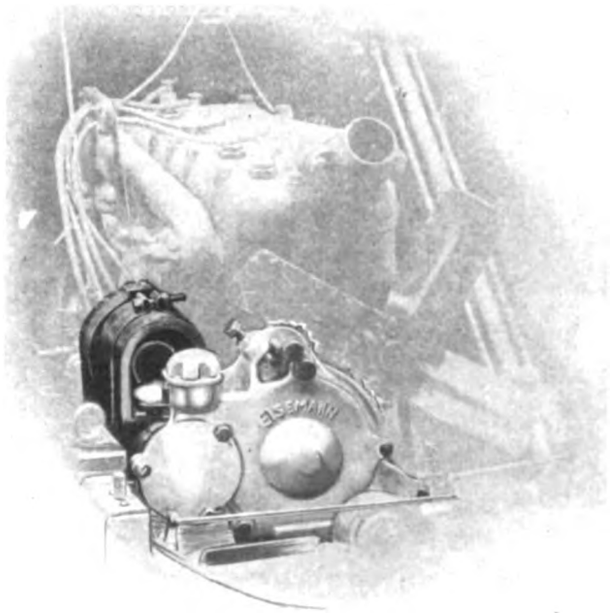
And installed it gives to its user the very finest magneto outfit it is possible to produce for any car regardless of price. It is a quality outfit all the way through.

Ford System Simple and Easy to Install

The Eisemann Magneto Co.

Sales and General Offices
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Cleveland

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800 ROOMS

The Leading Hotel of America's "Sixth City."

Home of the Cleveland Automobile Club.

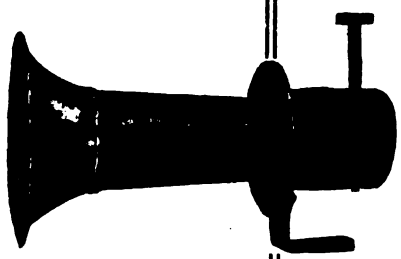


The Handphone

A Perfected Mechanical Horn

NO Adjustments Motor Troubles **NO** Electrical Wiring Battery Expense

Three Year Guarantee



$7

Built for the man who wishes a thoroughly efficient Motor Horn at a reasonable price without cost or expense of upkeep. Let us send on approval.

Automobile Supply Mfg. Co.
220 Taaffe Pl. Brooklyn



SPLITDORF PLUGS are the standard of PLUGDOM.

All sizes—for all cylinders—for all purposes.

Insist upon SPLITDORF—it's necessary.

SPLITDORF ELECTRICAL COMPANY

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BOSTON	St Germain & Mass. Ave.	MINNEAPOLIS	34 S. 8th St.
CHICAGO	64-72 E. 14th St.	NEWARK	290 Halsey St.
CINCINNATI	811 Race St.	NEW YORK	18-20 W. 63d St.
DALLAS	402 S. Ervay St.	PHILADELPHIA	210-212 N. 13th St.
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LONDON		BUENOS AIRES	

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The ONLY Brake Lining With a Definite Guarantee

Look for the SILVER EDGES and the name on every foot

THE ROYAL EQUIPMENT COMPANY
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"PASS THEM ALL"

Knox

MOTOR CARS

Send for Pleasure or Commercial Catalogue

KNOX MOTORS COMPANY
SPRINGFIELD, MASS.

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The balance of the car is as good as the motor—and the Moline-Knight is the World's Greatest Motor

For those demanding luxurious comfort

The 60-inch semi-elliptic rear springs with Truffault-Hartford shock absorbers insure comfortable riding.

The seats are wide, deep and comfortable—and the distinctive streamline body marks the Moline-Knight as a car of class.

You will appreciate the instantaneous getaway and the smooth, even pull of the powerful Moline-Knight engine. The power actually increases with use.

It is the "no-waste and up-keep-reduced-to-the-minimum car"—no carbon—no valves to clog or grind—less consumption of fuel per horsepower—simpler parts, fewer parts, less to get out of order—economy.

The Moline-Knight gives you a smooth, even pull with quick acceleration, without laboring—just a velvety feeling of steady, resistless power.

The Moline-Knight is guaranteed 50 horsepower, 128-inch wheelbase, 36 x 4½ inch Goodrich or Firestone Tires, Bosch plugs and ignition, Wagner electric starting, left hand drive, center control, power tire pump, and other conveniences.

Quality, durability, luxuriousness—not quantity—are the predominating requisites in building Moline-Knight cars.

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Distinctiveness without paying extra for reputation

Moline-Knight represents progress

The Moline-Knight is a car that is instantly recognized on the boulevard. It is symbolic of reliability, comfort and luxuriousness, and is as near perfection as human brains, energy and automatic machinery are possible to make it. All steels, wood, upholstering, leather and other materials used in the Moline-Knight cannot be better because the world's markets and craftsmanship have not yet produced anything superior.

This is the motor that made the phenomenal 337 hour non-stop run in the laboratory of the Automobile Club of America, New York, averaging 38 horsepower under load and at the end of the test reaching 53.6 horsepower at 1682 revolutions per minute.

Strongest where poppet valve is weakest

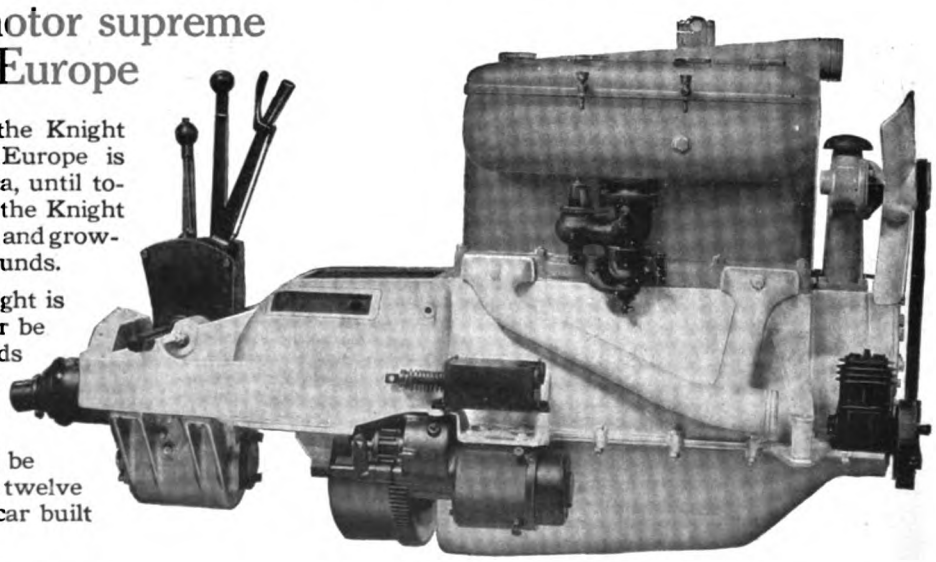
The superiority of the Moline-Knight motor over any poppet valve design lies in the fact that the efficiency and durability of the Knight system is not affected by high pressures. The explosion does not shock it at any point because the Moline-Knight motor is balanced against lateral pressure.

In the sleeve valve motor is combined silence, endurance and reliability of the small poppet valves and low compression with the high efficiency of the high compression large valves, powerful springs and precipitous cams of the racing poppet valve motor—consequently, the Moline-Knight engine has all the advantages of both types—and is therefore strongest where the poppet valve is weakest.

Knight motor supreme in Europe

The supremacy of the Knight type of motor in Europe is being felt in America, until today the demand for the Knight motor is established and growing by leaps and bounds.

But the Moline-Knight is a car that will never be built by the thousands—it is a special class car for special class men—just a limited number of cars will be built during the next twelve months—and each car built and finished right.



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More Power

$2400

Power
without Noise



More Flexibility

$2400

Speed
without Jolt

DEALERS

Big national advertising campaign under way

The complete story of the Knight Engine has never been told to the American buying public.

Starting in the latter part of August we will inaugurate a Moline-Knight advertising campaign for the purpose of telling the motorist just what it will mean to him to drive a Moline-Knight Car.

Liberal space in such well known publications as The Saturday Evening Post, Colliers, Life, Literary Digest and Motorist Magazines will be used regularly.

The illustrations on pages 1 and 4 of this announcement are a part of the pictorial advertising campaign that will be carried month after month.

It is our purpose to help our Moline-Knight dealers make quick, easy and profitable sales.

Just as we are limiting the number of cars we will build during the next twelve months so will we limit the number of dealers with whom we make contracts, in order to insure our being able to take care of each Moline-Knight dealer with prompt deliveries—and as a dealer it is your assurance of a profitable season.

A car you will be proud to sell

It is true that you can't sell the Moline-Knight to everyone, but in each community there is a group of men of means who want a car of class that is *different* and *better*.

This magnificent Moline-Knight car with distinctly foreign air, its streamline body, its perfect finish and individuality is a car you will be proud to represent, demonstrate and sell.

Just one or two sales in your community as an opening wedge and you will be surprised at the ease with which you can sell the balance of your allotment.

It will be the most talked of car in your territory.

The Moline-Knight Cars now in the hands of private owners have made good—every claim made by us has been substantiated.

Every Moline-Knight owner so far has become an enthusiastic booster for his car—and backed up by our advertising campaign—and, get this, you can't find another car at any price with a better, more satisfactory motor or graceful lines of beauty than the Moline-Knight.

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Price competition during the next twelve months will cut down your profits unless—

you get the *right* car—a car with some distinctive feature and talking point that lifts it out of the poppet valve competition.

And this is just what we offer you in the Knight-motored, Moline-Knight—a nice, permanent, steady, business and safe, sure profits.

You may have been selling one type of car until you have gotten into a rut—you may have been hanging on each year hoping that the next season would be more profitable—and if so, its up to you to at least investigate *right now.*

Open up a correspondence with us—write a letter *now* before you lay this announcement aside.

Ask us to tell you more about the car and our plan for supporting Moline-Knight dealers and helping them to make more money.

We will prove to you why we are specially fitted to build a Knight engine.

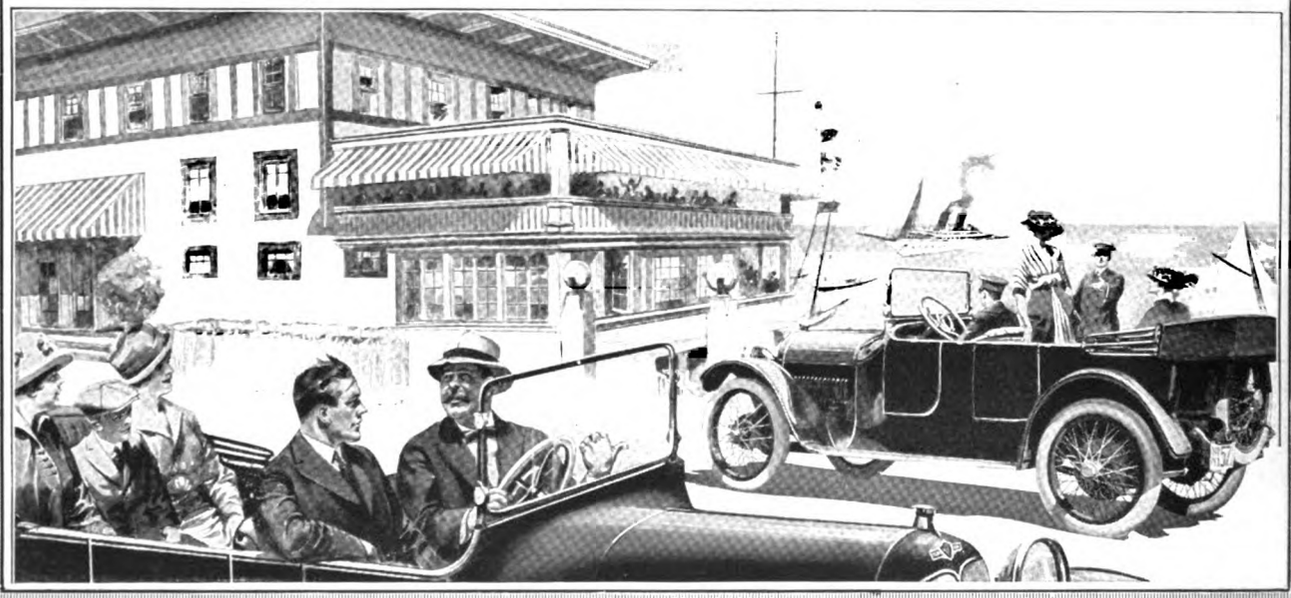
Then if this is satisfactory, we will arrange to have you come to the factory or send some one to see you who is authorized to "talk business."

Remember, in writing us you do not obligate yourself in any way to take our car—it's up to us to *show* you what we have and *prove* to you that the Moline-Knight will be the best car for you next season.

So write or wire — investigate the Moline-Knight before you make your 1915 contract—you want to be shown and we are here to show you.

Let us hear from you by return mail—a limited number of additional dealers necessary to take our entire production.

Moline Automobile Company, East Moline, Ill.



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Users and Dealers Are Delighted With The Dewey Power Tire Pump

The high efficiency of the Dewey comes from its superior design and excellence of construction. Its low cost makes it a manufacturing marvel.

$10 Complete

It pumps chemically pure air only, which does not go through the cylinder.

It is never oiled so it can't grease-rot an inner tube.

Its Barrel is steel—indestructible—light—good looking.

Its Special Hose is 12 feet long—protected by a handsome woven casing—and has stood a 1,000 pound test.

It gives you pressures up to 200 pounds.

It has a first class Pressure Gauge—which is not an "extra."

It has Self-Opening Connections to fit any tire.

It attaches at any spark plug opening. Adaptors furnished free. Weight, complete, under 4 pounds.

We deliver anywhere in the United States upon receipt of price if your dealer is not supplied. But ask him first.

THE DEWEY-ANDERSON MFG. CO.
462 Woodruff Ave
Toledo, Ohio



75% of all tire trouble is due to under inflation

THERE is no method yet discovered of ascertaining the pressure in the inside of a tire, except by the use of a pressure gauge. A casing containing 40 pounds of air looks and feels exactly like a casing containing 80 pounds. If your tires require 80 pounds and you only give them 40, they're on the quick road to the scrap-heap.

USE A

SCHRADER

Universal Tire Pressure Gauge

and Save Your Tires

Price, $1.00

For Sale by

A. SCHRADER'S SON, Inc.
783-791 Atlantic Ave., Brooklyn, N. Y.

D & C LAKE LINES

"Two GIANTS of the Great Lakes"

Str. City of Detroit III.
Str. City of Cleveland III.



Operating Between Detroit and Buffalo

The Delights of a Lake Trip

REST after work is necessary to human endurance, and holidays are a wise economy. The Great Lakes of America offer more vacation opportunities than any other source in the country. The steamers of the Detroit and Cleveland Navigation Company, operating to all important ports, are unrivalled in point of elegance, comfort and quality of service—the perfect freedom offered by the saloon and promenade decks, the commodious state rooms, luxurious furnishings and excellence of cuisine make life aboard these floating palaces a solace to the weary mind and body.

Where You Can Go

Daily service is operated between Detroit and Buffalo, Detroit and Cleveland; four trips weekly between Toledo, Detroit and Mackinac Island, the historic summer resort of the North Country; and from June 25 to Sept. 10 a special steamer, two trips weekly, will be in commission between Cleveland and Mackinac Island, stopping only at Detroit every trip. During July and August special daylight trips between Detroit and Cleveland. From June 10 to Sept. 10—daily service between Toledo and Put-In-Bay.

Railroad Tickets Available

Tickets reading via any rail line between Detroit and Buffalo, Detroit and Cleveland will be honored for transportation on D. & C. Line Steamers in either direction. Send 2 cent stamp for illustrated pamphlet and Great Lakes Map. Address L. G. Lewis, G. P. A., Detroit, Mich.

Detroit & Cleveland Navigation Co.
Philip H. McMillan, Pres. A. A. Schantz, Vice-Pres. and Gen. Mgr.
General Offices, Detroit, Mich.
Steamers arrive and depart from Third Avenue Wharf, Detroit.



There is going to be a mighty active demand for Warm Hand Steering Wheels this fall—and at the last minute we are going to be rushed to the limit to make any kind of deliveries, just as we were last year.

Don't wait till the last minute before stocking up with this accessory and then be disappointed at not being able to fill orders—we are warning you in ample time.

Even if you don't want immediate shipment at least let us know about what your requirements will be for this fall so that we can arrange to take care of your orders in ample time.

Remember that the Warm Hand Steering Wheel is just as necessary to comfortable driving in the fall months as it is in winter and that there is a lot of business to be done as early as September and October. Write us today for full information as to territory, discounts, etc.

The Warm Hand Steering Wheel Corp., Inc.
POUGHKEEPSIE, NEW YORK

Retail Price, $10.00

Patented April 23, 1907; Feb. 11, 1908; April 2, 1912. Other patents pending

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SHALER $3.50

Safety Vul-Kit

Vulcanizer

Save Tires—Saves Repair Bills

Repairs punctures, blow-outs and cuts in casings or tubes, perfectly—makes repair strongest part of tire. No watching, no regulating, automatic in operation. Impossible to undercure or overcure. Has no open flame—no danger if accidentally upset. Anybody can use it. Furnished complete at $3.50 with all repair material. Investigate.

Send for Book "Care and Repair of Tires"—its free.

C. A. SHALER CO. 431 Fourth St. Waupun, Wis.

Send Us Your Inquiries When in the Market for

SHEET METAL STAMPINGS

Estimates Cheerfully Furnished

THE BOSSERT COMPANY

Utica, N. Y.

A NEW SERIES and A NEW PRICE

1915 PREMIER $2385

Stream line body, left side drive, center control, one man top, electric lights and starter, six cylinder unit power plant, three point suspension, and all the other attributes of a high grade, up-to-date automobile for $2385. *Write for Catalog.*

Premier Motor Mfg. Co.

Indianapolis

New and Rebuilt Cars at a Sacrifice

In order to dispose of a lot of 150 electric vehicles, new and rebuilt chain- and shaft-driven vehicles, we are offering them at prices that will enable you to make large profits. Each new car is absolutely perfect, while the rebuilt cars are in first-class condition, richly finished and completely overhauled—new tires and new batteries. All cars guaranteed one year. WRITE US TODAY about our attractive proposition.

Buffalo Electric Vehicle Company

Main Street, Buffalo, N. Y.

Ford

Model T Runabout	$500
Model T Touring Car	550
Model T Town Car	750

With Full Equipment, f.o.b. Detroit

FORD MOTOR COMPANY

Detroit, Michigan

Cox Combination Welder and Decarbonizer Outfit



Save time, money and make extra **profit doing** your own welding. **Outfit complete** and simple; **repairs worn** and broken parts good **as new.** Welds iron, steel, brass, **bronze and** aluminum. Safe and **sure. Quick** repair work. Includes **oxygen carbon** remover feature. **Double work,** double profits. Pays for itself in short time. Complete instructions furnished.

Write for Catalog--NOW

COX BRASS MANUFACTURING CO., Albany, N. Y.

NEW YORK CITY 1777 Broadway | BOSTON, MASS. 899 Boylston St. | CHICAGO, ILL. 2637 Michigan Ave. | DETROIT, MICH. 870 Woodward Ave. | SAN FRANCISCO, CAL. 1216 Van Ness Ave.

Inter-State

We have a money making proposition for every live dealer in the country.

It will pay *you* to investigate it *now*.

Inter-State Motor Company

Dept. B MUNCIE, IND.

HOUK

Detachable

WIRE WHEELS

"The wheel that makes any car modern"

Houk Mfg. Company, 1703 Elmwood Avenue, Buffalo, N. Y.

For George W. Houk Co. (Licensed Under Rudge-Whitworth)

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LEWIS VALVES Toledo

To Your Specifications

High quality materials and accurate workmanship are the two factors that make Lewis Valves stand ahead of the rest.

We make valves exclusively and can handle large or small orders. Lewis Valves will be made to your specifications if desired, but they will be heat treated by the Lewis method which means long wear and more power.

Lewis Electric Welding & Mfg. Co.
TOLEDO, OHIO

A Brake Lining Like a Tire Must Wear Out Some Time But There is a Lot of Difference in the "Time." When the Tire Wears Out You Have a Blow-Out—When the Brake Lining Wears Out You Have a Wreck

In actual test on thousands of cars GARCO BRAKE LINING has proved its ability to withstand more brakeage under heavy load than any other lining made. Its exceptional materials, its long fibre asbestos, its correct weaving, its secret chemical binder, produce a lining that is ALMOST indestructible. Years and years of service hardly lessen its ability to grip the metal drum.

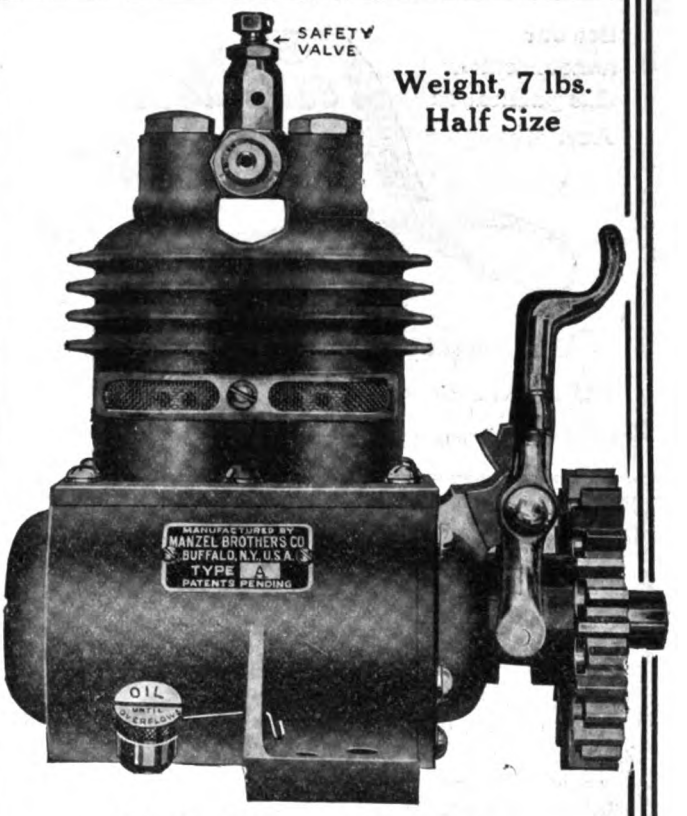
We also manufacture ASBESTOS CLUTCH LINING and a full line of Asbestos Textiles, Asbestos Metallic Sheet Packing, Gaskets, and Valve Stem Packing.

BRANCHES
312 First Avenue
Pittsburgh, Pa.
58 Warren Street
New York, N. Y.

GARCO

Asbestos Brake Linings

MANUFACTURED BY GENERAL ASBESTOS & RUBBER CO. Charleston, S.C.



Weight, 7 lbs.
Half Size

Sell Tire Comfort

Your customers will appreciate the solid value of a Tire Pump which relieves them of the greater part of the annoyance of a puncture, prevents rim-cuts, and gives 20 to 25 per cent. more tire life.

MANZEL
ENGINE DRIVEN TIRE PUMP

The Manzel Engine Driven Tire Pump

does all these things by making it so easy to pump up tires and keeping them at just the right pressure all the time.

The Manzel Tire Pump gives permanent satisfaction because it is designed and built in a manner worthy of a permanent installation on the best cars: Abbott-Detroit, Buick, Cadillac, Cole, Cartercar and many others.

The points of the MANZEL are definite values: a high-class machine that you can recommend as the fastest, strongest, **surest** Pump made.

You should handle this Pump. Write today for dealer prices.

Manzel Bros. Company
333 Babcock Street Buffalo, N. Y.

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See our announcement this publication Aug. 5th

Laidlaw BURBANK MOTOR CLOTH

The Laidlaw Company, Inc.
126-132 West 46th Street New York

Prest-O-Lite
is the most
EFFICIENT
Lighting System

All the facts on all lighting systems mailed you on request

The Prest-O-Lite Co., Inc., 287 Speedway Indianapolis, Ind.
(Contributor to the Lincoln Highway)

You can't beat Diamond mileage—for distance or low cost. Then equip with

Diamond
Squeegee Tread Tires

The squeegee tread insures non-skid certainty—and Diamond quality insures Diamond service at every revolution of the wheel.

Demand Diamond Tires

CONNECTICUT AUTOMATIC IGNITION



Gives every advantage of ideal ignition with none of the magneto's shortcomings. Ask for Booklet.

CONNECTICUT TELEPHONE & ELECTRIC CO., Inc.
MERIDEN, CONN.

MARMON
"The Easiest Riding Car In The World"

"41" $3250 132" Wheelbase

"48" $5000 145" Wheelbase

Nordyke & Marmon Company
Indianapolis (Established 1851) Indiana
"Over Sixty Years of Successful Manufacturing"

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Booth FELT
TRADE MARK

Washers, Gaskets, Packings and Felt Goods are specified by engineers of all the leading American high grade cars.

N. E. BOOTH
621-644 Pacific Street Brooklyn, N. Y.

STEADY AND SURE

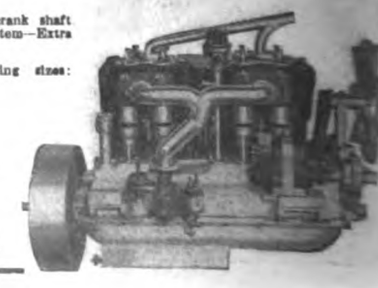
In road races and daily service Wisconsin Motors have established a wonderful record for efficiency and endurance. They start easily, run steadily and are always under perfect control.

Wisconsin MOTORS
CONSISTENT

Mechanically perfect—Long diameter crank shaft—Automatic self-contained Oiling System—Extra large bearings.

Write for catalog describing following sizes:

3¾x5 inch, 4 Cylinder, Enbloc
4 x5 inch, 4 Cylinder, Enbloc
4¼x5 inch, 4 Cylinder, T. Head
4¾x5½ inch, 4 Cylinder, T. Head
5¼x7 inch, 4 Cylinder, T. Head
3¾x5½ inch, 6 Cylinder, Enbloc
4 x5 inch, 6 Cylinder, Three Enbloc
4½x5 inch, 6 Cylinder, T. Head
5¼x7 inch, 6 Cylinder, T. Head



WISCONSIN MOTOR MFG. CO.
Dept 32, Milwaukee, Wis., U. S. A.

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Quick Detachable and Demountable Rims

Our new and improved manufacturing facilities insure quality products and prompt deliveries in large or small quantities.

Jackson Rim Company
Jackson, Mich.

DEALERS who are looking for a real opportunity to build a substantial, permanent business will find the 4-page advertisement of Century Electric Car Co. which appeared in Motor World, June 24, full of practical suggestiveness.

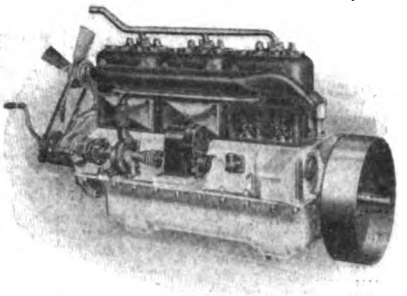
We have an *unusual* electric—and yet there is nothing freakish or radical—and, now is the time to write.

CENTURY ELECTRIC CAR CO., Detroit, Mich.

THE RUTENBER MOTOR

Manufactured since 1901 for high grade
AUTOMOBILES and TRUCKS

3¾ x 5½ four and six cylinder, 4¼ x 5¼ four cylinder, Standard or Unit, and 4 x 4 and 4½ x 5½ Standard types, all L head—4 cycle.



Manufacturers are invited to investigate our service and our facilities. Literature on request.

The Rutenber Motor Co.
MARION, INDIANA

GOODYEAR
AKRON, OHIO.

This name on Automobile Tires and Rubber Accessories signifies inherent qualities of material and workmanship that insure the maximum of service at the minimum of expense.

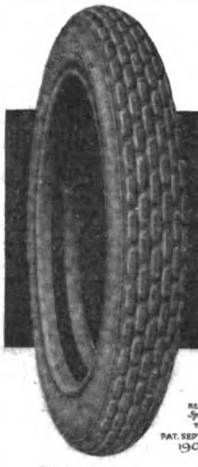
THE GOODYEAR TIRE & RUBBER CO.
AKRON, OHIO

(673)

What the Moore Multiple Exhaust System means to You.

By this system, exclusively our own, you gain 22.8 per cent more power with the same amount of fuel. Great economy and more power when you want it. No back pressures in the exhaust manifold. The clean incoming gas is undiluted.

THE LEXINGTON-HOWARD COMPANY
126 Main Street, Connersville, Ind., U. S. A.



THINK THOUSANDS OF MILES AHEAD, AND YOU WILL BUY
REPUBLIC MILEAGE
PLAIN AND STAGGARD TREAD
TIRES

THE REPUBLIC RUBBER CO.
YOUNGSTOWN, OHIO.
BRANCHES AND AGENCIES IN THE PRINCIPAL CITIES.

Standardized Transmissions
COVERT
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Sales Office Detroit
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Hyatt Quiet Bearings

Hyatt Quiet Bearings are used in the majority of American made Automobiles

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Fourth and Middlesex Sts., Harrison (Newark), N. J.
1210 South Figueroa St., Los Angeles, Cal.

SERVICE AGENTS
Pence Automobile Co., 800 Hennepin Ave., Minneapolis, Minn.
Broom & Wade, High Wycombe, England.

HYATT ROLLER BEARING CO.
DETROIT, CHICAGO
NEWARK, N.J.

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The Clearing House of the Motor Industry

For Second Hand Cars, Surplus Parts, Accessories, Tires, Machinery & all other Special Announcements of a Similar Character

SUPERINTENDENT WANTED — For a growing manufacturing company. Three years old, output has doubled each year, now employ 100 men and are six months behind on orders; expect to employ 500 men in three more years. We want a young and live production man who has already made good. Must have had the most modern metal manufacturing experience. Prefer one versed in automobile practice and one now employed. Only a man of the highest class who can command an adequate salary need apply. This is the chance of a lifetime for the right kind of a man. Send fullest particulars first letter. Everything treated confidential. Box 288, care Motor World.

SALESMAN and Automobile Expert, age 30 years, operating auto. supply store, wishes additional work selling mechanical goods for large house, south eastern territory. Address WORK, Box 286, care Motor World.

FORD RACING TYPE BODIES
We build them in several models. Also hoods, seats, tanks and fenders
AUTO SHEET METAL WORKS
1530 S. MICHIGAN AVE., CHICAGO, ILL.

PATENTS SECURED EVERYWHERE
My aim is to honestly advise and faithfully serve my clients. Incorporation papers prepared.
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Automobile and Motorcycle Tours
350 trips over the best roads in every State. 56 large pages of maps and road directions. 25c. postpaid.
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ONLY REAL HUSTLERS. We have the best automobile tire proposition. $1.00 to $5.00 profit on every sale. No stock investment. 2c stamp for particulars.
PEERLESS TIRE CO., 304R 54th St., West New York

FORD MODEL T, REFERENCE BOOK
Second edition. A manual on care, repair and operation. Makes you master and mechanic of Ford Model T. Circular on request or sent postpaid. $1.00
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FORD REPAIRER
Pin this ad to your letterhead and we will send you our big list of Ford repair parts. Our prices are lower than you can buy elsewhere.
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Send for sample page and get list from reliable party right in Trenton. Daily service only $70.00 for entire year 1914.

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You Can Change Your Car Into Raceabout Yourself
We Furnish Radiators, Hoods, Seats, Tanks and Fenders
Get our Prices
AUTO SHEET METAL WORKS
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OHIO RANKS THIRD
110,000 cars this year. Owners lists, for state, city or county, or special lists of any make electric, gas car or truck at lowest prices. Prompt and reliable service.
BUCKEYE AUTO LIST CO. Canton, Ohio

REDUCE THE HIGH COST OF RUNNING YOUR AUTOMOBILE

By Buying Supplies at Less Than Manufacturers' Prices From the Original "Price Wreckers."

World's Largest Dealers

Every Item in This List a Bargain. Read every one carefully

Following is a list of a few of our especially good values. It is not a complete list of our stock. Do not hesitate to call on us if you are in the market for anything not listed.

Schebler Carburetors, 1¼-in. model "D" and "L"	$7.90
Holley Carburetors	2.50
Rayfield Carburetors	6.50
Kingston Carburetors	2.50 to 4.00
Side Oil Lamps, per pair	2.75
Electric headlights, regularly $25, our price, per pair	8.00
4 and 6 cylinder Ginnaoli imported magnetos, high tension, regularly $100 to $150, our price	15.00 and 20.00
Bosch low tension magnetos	5.00
Remy magnetos, model "S"	9.00
Splitdorf dual outfits, complete	25.00
Magneto coils	4.00 up
4 and 6 cylinder Connecticut coils	12.00
Storage batteries	8.00 up
Steering columns complete with wheel	15.00
Stewart-Warner and Jones speedometers	From 8.50 to 15.50
Velvet shock absorbers	10.00
Mondex shock absorbers, per set of 4	20.00
$40 Disco starters	5.00
Racing seats, regularly $50 per pair, our price	15.00 each
1914 Ford runabout bodies	40.00
Roadster bodies	each 30.00
Peerless 7 passenger bodies	35.00
5 passenger fore-door bodies	each 85.00
Axles complete, front and rear	40.00 up
Ford radiators, best quality	17.00
Radiators—Cadillac, Pierce, Knox, Stevens-Duryea, Flat, Warren, Olds and a hundred others	17.00 to 35.00
Ball bearings, all sizes	Less than one-third
Round gasoline tanks	6.00
Square gasoline tanks	2.50
Prest-O tanks, Model "B"	13.50 complete
Continental rims, Gilbert type or plain	3.00
Dorian rims, all sizes	2.50 and 3.00
Universal joints	5.00
Rear tire holders, 1 or 2 tires	1.75
Electric horns, complete with push buttons and wire	1.95
$25.00 trunks	5.00
Tire covers	0.75 and 1.00
$25.00 windshields	9.50
Mohair dusters	3.50
Chauffeurs' dusters	1.00
Storm fronts and side curtains	1.00
Appleco Lighting System, complete	40.00
Brown-Lipe Transmissions	50.00
Top covers	2.50
Tire gauges	0.35
Reliners	1.75
Single, double and triple action pumps	0.75 up

A1 tires and tubes—

30 x 3 casings	$6.65	Grey tube	$2.35
30 x 3½ casings	9.55	Grey tube	2.95
32 x 3½ casings	9.65	Grey tube	3.20
34 x 4 casings	14.65	Grey tube	4.10
36 x 4 casings	14.85	Grey tube	4.40

Other sizes in proportion.

Truck tires, all sizes	12.00 to 25.00 each
Springs, all sizes, at less than one-half factory prices.	
Motor driven electric horns	7.50

We also have such goods as Klaxon horns, Weed chains, Spitfire Sootless spark plugs, and, in fact, everything for the automobile. Consult us before buying anything in the way of automobiles or supplies and send for our free price wrecker.

Steering Wheels, $2.50 to $3.50; Fenders, all sizes, $1.50 up; Tops, Runabouts and Touring, $15 up; Lavigne oilers, $5 to $7.50; Ford oilers, 5c.; Tool boxes, all sizes, $1.00 up; Jacks, 65c. up; Tool kits, $1.25 up; Goggles, 20c. up.

TIMES SQUARE AUTOMOBILE CO.

S. W. Cor. 56th St. and Broadway New York
1210 Michigan Avenue Chicago

P. BRADY & SON CO.
Trucking and Storage. Automobiles and Bodies stored. Automobiles boxed for Export.
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TIRE BILLS CUT IN HALF

We guarantee you 2000 additional miles out of your old casings. Send us two old tires, and we return them as one ready for hard service. We are saving thousands of motorists money by our reclaim system.

Write us today

COWANS BROS.
150 West 55th Street New York City

I WILL SELL YOU CLINCHER
or straight side tires, either firsts or seconds, cheaper than any one in the United States.
D. OGDEN, Columbus, Ind.

FORD COMMERCIAL BODIES
$68.00
Full Wood Panel
FORD COMMERCIAL BODY CO.
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SALESMAN WANTED
To handle as side line on commission a full line of highest grade repair parts for magnetos and coils. Every dealer and jobber has use for these parts. Answer, Box 290, care of Motor World, giving territory covered.

PARTS AND ACCESSORY MAKERS
The Motorcycle field is well worth your attention. 105,000 new machines in 1913. Leading Medium. "Motorcycle Illustrated."
51 Chambers Street New York
Paid Circulation over 11,600.

WM. WOOSTER BUYS FOR CASH

Your Stock, Machinery, Cars—any amount.
BUYERS SEND FOR MY LIST
875 7th Avenue New York

MAILING LISTS AND STATISTICS

Owners or dealers; any state, county or city; weekly and monthly supplements at lowest prices. Special lists of Electrics, Trucks, Fords, Studebakers, Overlands, etc.
MOTOR LIST CO. OF AMERICA
230 News Arcade Des Moines, Iowa

TOOL KITS

Special sale of complete tool kits. Why pay $5.00 when you can get a standard kit complete for $1.09.
PURITAN MACHINE COMPANY, Detroit, Mich.
All Parts—All Cars

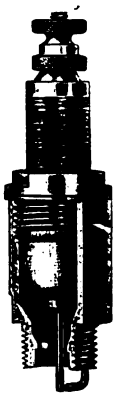
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Triplex Engine Starter
For Ford Cars

Mechanical, durable, simple and efficient. 100 per cent. uninterrupted service from the time it is attached.

Write for particulars regarding dealer arrangements.

UNIVERSAL MANUFACTURING CO.
RACINE, WIS.



SOOTLESS
SPARK PLUGS

Have records of a set used 6 years—a set used 48,000 miles.

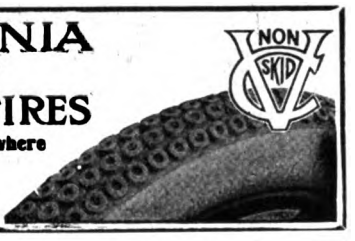
Manufactured by
The OAKES & DOW CO.
BOSTON, MASS.

STUTZ
Official Road Race Champion
The success of Stutz racing cars in contests means greater power and stronger parts in the vital places guaranteeing longer life and better service on the road. *Write for literature.*
Stutz Motor Car Company, Indianapolis

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SHARRER

TOP MAKERS don't overlook the
"Sharrer One Hand Top" agency
Be prepared for the Spring rush, write quick.
SHARRER PATENT TOP CO. Inc.
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PENNSYLVANIA
Oilproof
VACUUM CUP TIRES
Making Their Mark Everywhere
Pennsylvania Rubber Company
Jeannette, Penn.



ERE-LONG YOU'LL USE
LONG
Cellular—Honeycomb—Spiral Tube Cooling Systems for Pleasure Cars — Trucks — Tractors.
Write to LONG MANUFACTURING COMPANY, Detroit, U. S. A.

Hupmobile

"32" Touring Car, fully equipped	$1,050
"32" Roadster, fully equipped	1,050
"32" Touring Car or Roadster with Westinghouse two-unit electric generator and starter; electric lights; over-size tires, 33 x 4 inches; demountable rims, extra tire carrier at rear	1,200
Coupe $1,350 Delivery Wagon	1,075

All prices F. O. B. Detroit

HUPP MOTOR CAR COMPANY
1254 Milwaukee Avenue Detroit, Mich.

For anything in sheet metal that goes onto an automobile ask the
HAYES MANUFACTURING COMPANY
DETROIT, MICHIGAN
Largest Users of Sheet Metal in the World

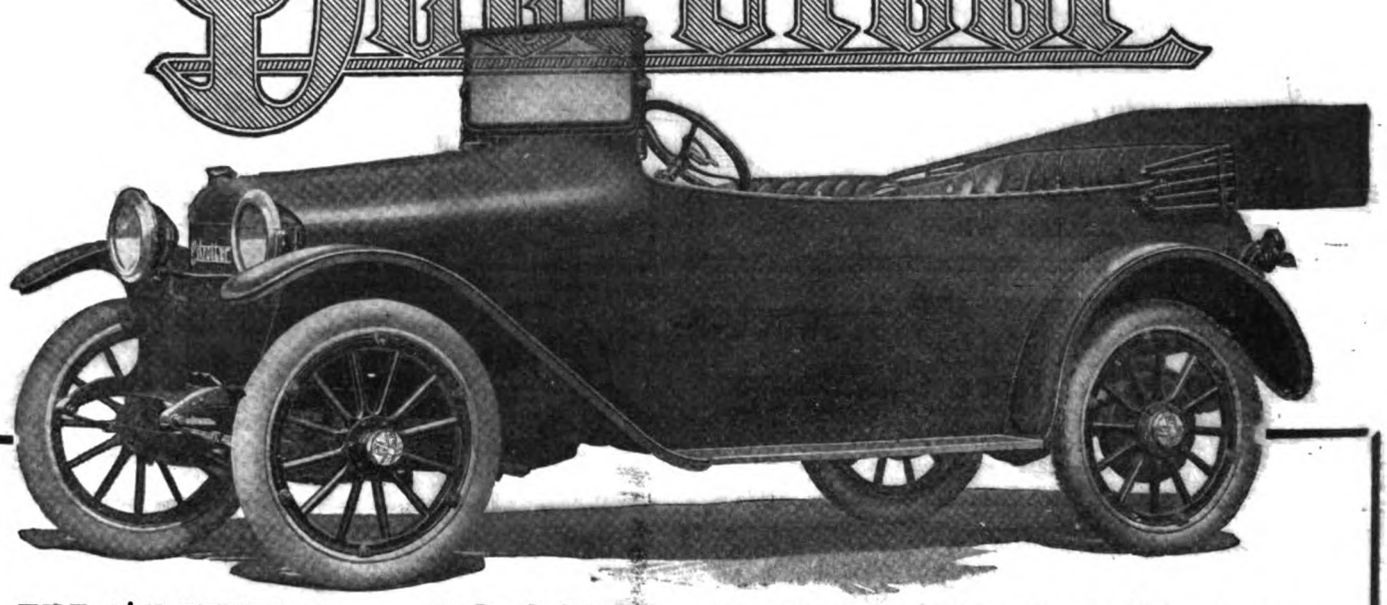
HESS AUTOMOBILE AXLES
Your Car as Good as Its Axles
Hess Axles Make a Good Car
Enough Said
HESS SPRING & AXLE COMPANY, Cincinnati, Ohio

GEARLESS TRANSMISSION
Cartercar
Big Model 5-A
SIMPLE—STAUNCH—TRUE
A Car Full of Hill Climbing Ability
Interesting Facts About the Gearless Transmission Sent Free—*Write for them.*
Cartercar Company Pontiac, Michigan

Pressed Steel Frames for Pleasure Cars and Trucks
Rear Axle Housings
Heavy Stampings
Forgings
A. O. Smith Company
MILWAUKEE

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Detroiter



WANTED—MORE DEALERS to Share in a New Success

THE 1915 Detroiter is literally and absolutely the first pure European stream line automobile in this country. It is the first actual long stroke, high speed, ball bearing, American motor. This car, well advertised, must meet a tremendous demand. Think of it—the only car of its price with long stroke motor, full-floating rear axle, platform rear spring, genuine European stream line design. Then add thirty-four special refinements! All at $1050, including Westinghouse starting and lighting system.

$1050 With Westinghouse Starting and Lighting Equipment.

First Actual European Design

Not only is the 1915 Detroiter more beautiful, but it is mechanically more perfect than any car ever brought out in its class. Accessible carburetor, red electric flash for indicating low oil level, special reinforced frame, motor removable by simply taking off radiator and hood, no throttles in the way of adjustments, are only a few of scores of superior engineering points found in the new Detroiter

A True High Speed Motor

European motors won the first four places at the Indianapolis races this year. **All these motors were ball bearing.** So is the Detroiter motor—the **only** motor of this type, to our knowledge, made in America. It is a high speed motor of tremendous power and low gasoline consumption.

This car is the biggest advance ever made at one stride in the history of American automobile construction.

Dealers and Distributors

Greatly enlarged production makes possible many new distributing agencies. Valuable territory will be allotted. Write, wire, or come.

BRIGGS-DETROITER COMPANY

449 Holbrook Avenue **Detroit, Michigan**

Other Models Without Starter, $850 to $925

34 Special Features

The biggest car at the price.
The lightest car of its class—less than 2300 pounds.
First complete streamline.
112-in. wheelbase.
32 horsepower.
Worm-driven silent starting motor.
Full-floating rear axle.
3-point platform rear spring suspension.
Actual one-man top.
14-inch service brake; 10-inch emergency brake.
Four 24-inch doors.
Non-skid rear tires.
Aluminum and linoleum running and floor boards.
20-operation body finish. Luxurious upholstery.
5-passengers without crowding.
Fuel tank in cowl.
Ventilating, rain-vision windshield.
Ball-bearings throughout.
Multiple disc clutch in oil.
Duplex tire carrier in rear.
Center one-lever control.
Rounded radiator with radiator mud shield.
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Emergency search lamp.
Electric cigar lighter.
Aluminum encased instrument board. All recording instruments combined in one unit.
Positive gasoline gauge.
Electric-flash oil gauge.
Carburetor above frame.
Both automatic and manual spark advance.
Both foot accelerator and hand throttle.
Horn button in center of steering wheel.
20 to 25 miles per gallon of fuel.
100 miles to quart of lubricant.

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In every line of business there is a pioneer. And many, many followers.

There was a time when unknown, cheaply-made imitations were *bought*—when "just-as-good" talk was *believed.* But the ideas of the buying public have changed. Experience has changed them.

And of all classes of buyers, motorists are among the wisest. Their experience has been the most costly. Today motorists buy with open eyes. They know what they want. They get it. Motorists know the Klaxon. If not from actual experience—they know the Klaxon from the experience of their friends. Klaxon quality has been *proved;* Klaxon warnability *demonstrated;* Klaxon service *verified.*

It is hard to convince buyers that Klaxon satisfaction can be bought for less than Klaxon price.

For it can't.



KLAXONET

Lovell-McConnell Mfg Company Newark, N.J., U.S.A.

KLAXON

"The Public Safety Signal"



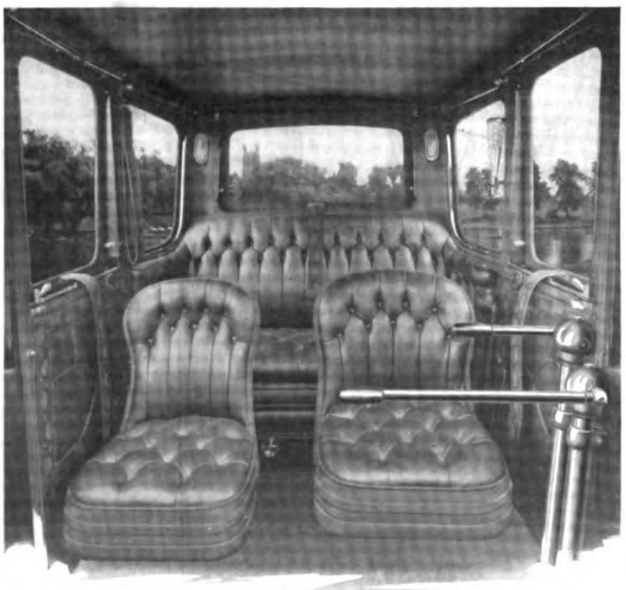
KLAXON

This advertisement planned, written and set up entirely in the Klaxon Factory. Type composition by the Klaxon Press with "Klaxon" type especially designed by Goudy.

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EXTERIOR OF BROC MODEL THIRTY-SIX



INTERIOR OF BROC MODEL THIRTY SIX

Let the Customer Select His Car

AMERICAN Electric Car Dealers find it unnecessary to oppose the practical preferences of their customers. All features of proven merit are embodied individually or collectively in the fourteen models of The American Electric Car Company's complete line.

The customer can have his choice of a low-priced serviceable car, or a higher-priced luxurious car. He can choose a roadster, coupe, brougham, or limousine. He can have wheel-steer or lever-steer; front-drive, rear-drive, or double-drive; hand speed-control or foot speed-control.

Surely, the dealer who can offer his customers their choice of so many desirable features, has the greatest opportunity to secure business.

You may not be quite ready to add a line of electric cars. But certainly you are ready to acquaint yourself of the details of the best electric car dealer-proposition ever offered.

Write a letter or post-card today.

THE COMPLETE LINE

Model		Type	Pass.	Drive	Price
Argo	B	Roadster	Four		$2350
	A	Coupe	Four	Rear	2650
	C	Coupe	Five	Forward	2800
Borland	52	Roadster	Two		2250
	45	Coupe	Four	Rear	2400
	50	Brougham	Four	Forward	2600
	50	Brougham	Four	Rear	2550
	60	Limousine	Seven	Outside	5500
Broc	28	Brougham	Four	Rear	2900
	29	Brougham	Four	Rear	2950
	31	Brougham	Four	Forward	2950
	33	Brougham	Five	Rear	3100
	34	Brougham	Five	Forward	3150
	36	Brougham	Five	Double	3200

All Argo Models, Borland Roadster and Limousine, are wheel-steered. All Argo Models have foot speed-control. All Borland and Broc Models have hand speed-control.

The American Electric Car Co.

ARGO BORLAND BROC

Offices and Factory **Saginaw, Michigan**

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MOTOR WORLD

A Trade Paper Giving the World's Motor News

Volume XL
No. 6

New York, August 5, 1914

Ten cents a copy
Two dollars a year

GRAY & DAVIS
STARTING-LIGHTING SYSTEM

One Unit For Cranking

Concentrated power overcoming all weather conditions.

Ease of control.

Energy directed along one line—not two.

Complications avoided.

No needless turning of armature.

One duty to perform and only one.

One Unit For Generating

No compromise between starting and lighting functions.

Minimum H. P. required.

Extremely simple in design.

Increased efficiency.

Battery fully protected.

6 volts, not 12 or more.

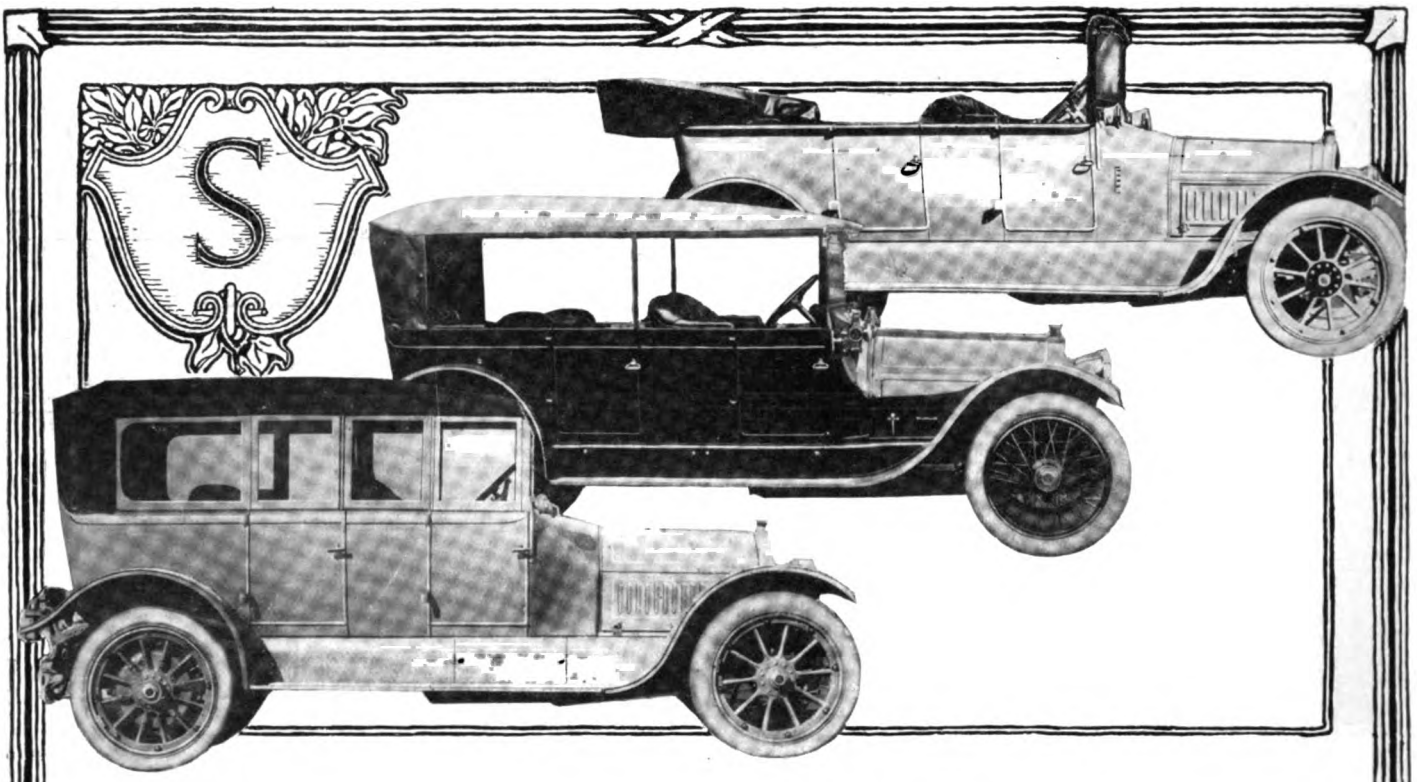
One duty to perform and only one.

The Gray & Davis system offers two distinct devices for two distinct functions.

GRAY & DAVIS, Inc. **Boston, Mass.**

Published Weekly by the Motor World Publishing Company, 231-241 West 39th St., New York

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SPRINGFIELD
Convertible Bodies

are the logical solution of the problem confronting 99% of your customers—how to have a car which can be used in all kinds of weather.

Not over one per cent of the motorists can afford both an open and a closed car. Therefore, it would be good judgment on your part to order one of your chassis equipped with a Springfield Convertible Body to show and demonstrate to 99% of your customers—good judgment because:

1st. It meets the requirements of the greatest number.

2nd. There is an added profit for you on each sale.

Particulars on Request

Springfield Metal Body Company

Springfield, Mass.

New York Showroom: Buick Building, Broadway at 55th Street, New York City

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THIS name stands for the finest brake lining possible to make. It represents a high degree of quality and wearing power which no competitive product has ever been able to attain. We could cheapen

TRADE MARK
Raybestos
REG. U.S. PAT. OFF.

in many ways and sell it at a lower price. But that we will never do. The integrity of the Raybestos name and the safety of the Raybestos user far outweigh all other considerations.

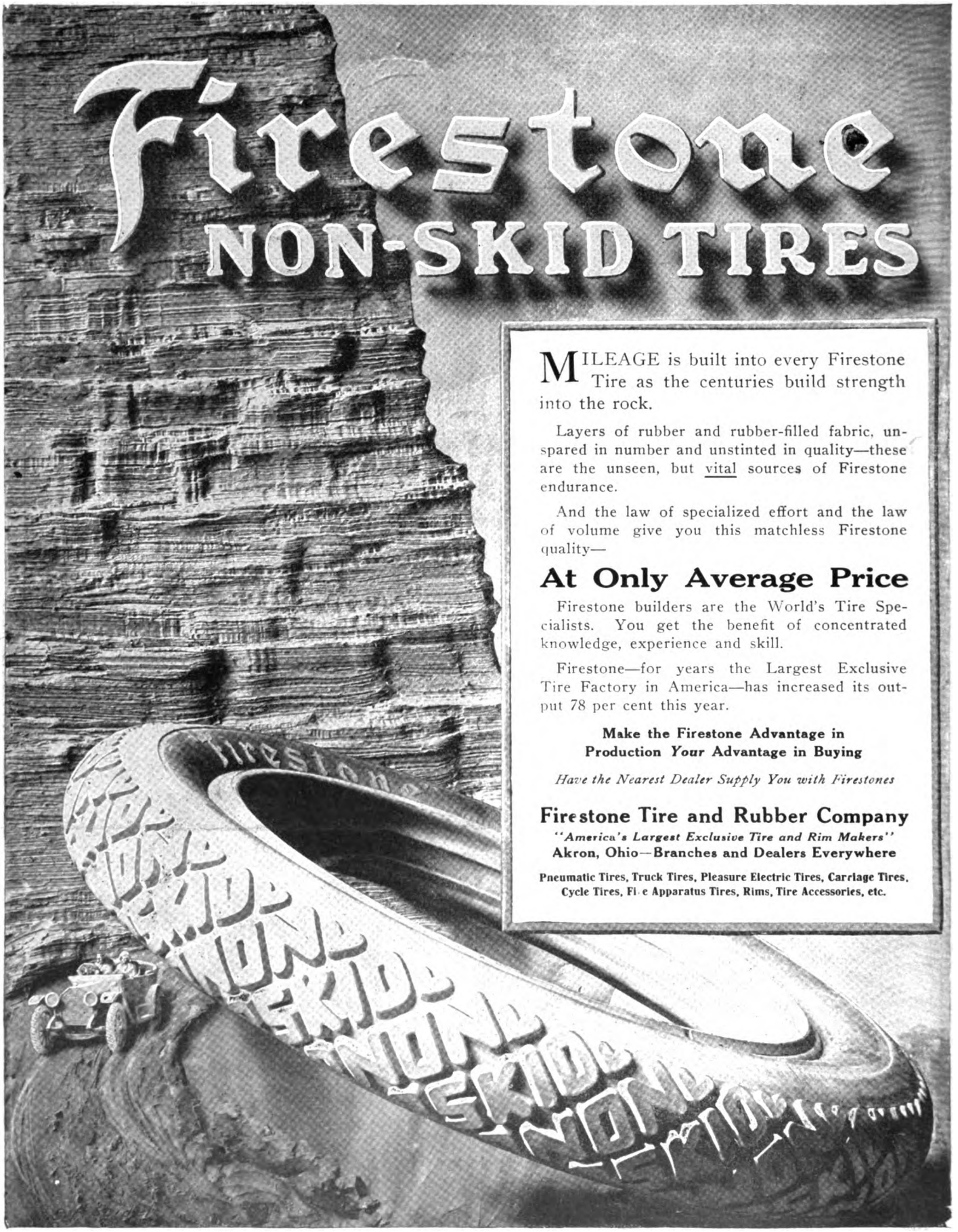
Whenever you see the name Raybestos, you will know it represents the very utmost in safety, serviceability and strength.

In these days of frenzied competition in the brake lining field, we believe this declaration of principles is needed. And we back it up with a definite guarantee that no other maker duplicates.

THE ROYAL EQUIPMENT CO.

1379 Bostwick Avenue Bridgeport, Conn.

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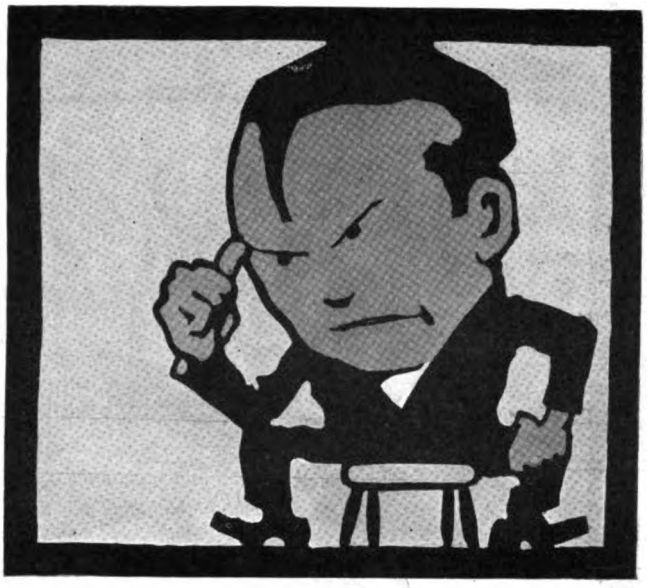
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The man who thinks most about automobile tires doesn't think about them at all after he's put Kelly-Springfield Tires and Tubes on his car. We've done the thinking.



Kelly-Springfield Tire Company

Corner Broadway and 57th Street, New York

Branch offices in New York, Chicago, Philadelphia, Boston, St. Louis, Detroit, Cincinnati, San Francisco, Los Angeles, Cleveland, Seattle, Atlanta, Akron, O.

The Hearn Tire & Rubber Co., Columbus, O.
Bering Tire & Rubber Co., Houston, Texas
Boss Rubber Co., Denver, Colorado Springs and Pueblo
The Olmsted Co., Inc., Syracuse, N. Y.
Southern Hdwe. & Woodstock Co., Ltd., New Orleans, La.
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Central Rubber & Supply Co., Indianapolis, Ind.
C. D. Franke & Co., Charleston, S. C.
K. & S. Auto Tire Co., Limited, Toronto, Can.
Todd Rubber Co., New Haven, Conn.
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Complete With Electric Starter

BRIEF SPECIFICATIONS: Electric head, side, tail and dash lights; 35-horsepower motor; 114-inch wheelbase; Mohair top, curtains and boot; High-grade speedometer; Clear-vision, rain-vision, windshield; Electric horn

THERE does not exist another automobile manufacturer who can build a car according to Overland specifications and market it at the Overland price *without losing money.*

That is why *all other cars* of a similar description and corresponding specifications *have* to be sold at considerably more money.

Catalogue on request. Please address Dept. 50

The Willys-Overland Company, Toledo, Ohio

Manufacturers of the famous Overland Delivery Wagons, Garford and Willys Utility Trucks. Full information on request.

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MOTOR WORLD

Vol. XL New York, U. S. A., Wednesday, August 5, 1914 No. 6

FORD PROFITS NOW TO BE SHARED WITH THE BUYERS

Prices Are Cut and Will Be Further Reduced If Company Makes 300,000 Cars During Year—Cut May Reach $120.

Prices of Ford cars have been reduced; the plan as announced for the coming year will include a sharing of the company's profits by customers. This is said to complete the triangular profit-sharing plan which the company had in mind when the employes were given a portion of the earnings of the company.

Each car has been reduced $60 and is sold with the understanding that if 300,000 cars are disposed of between August 1, 1914, and August 1, 1915, each person who buys a car between those dates will receive an additional discount of from $40 to $60, making a total reduction of from $100 to $120 on each car.

Thus the touring car, which has been sold for $500, will sell for $490 and under the conditional plan the price will amount to $450 or $430; the roadster is cut from $500 to $440, with a possible added $40 or $60 discount, and the town car drops from $750 to $690, with the possible added reduction.

The 300,000 car output represents, it is stated, a condition of maximum efficiency in the Ford plant and will make the profit-sharing possible. It would entail the distribution of about $18,000,000 among customers.

Flint to Have a $450 Car.

A two-passenger light car to sell at $450 will be made by the Monroe Motor Co., which has been organized and incorporated in Flint, Mich., with a capital stock of $250,000. The plant formerly occupied by the Imperial Wheel Co. has been secured and manufacturing will start at once. The board of directors consists of R. F. Monroe, for the last three years with the Chevrolet Motor Co.; W. C. Durant, of the General Motors Co.; Arthur G. Bishop, president of the Genesee County Savings Bank; A. B. C. Hardy, general manager of the Chevrolet Motor Co.; R. T. Armstrong, of the Armstrong Mfg. Co.; Curtis R. Hathaway, of New York. Monroe is president and general manager of the new concern.

Chalmers Absorbs Boston Distributer.

Saturday, August 1, the Clalmers Motor Co. took over the entire business of the Whitten-Gilmore Co., which has handled the Chalmers in Boston and vicinity for several years. The Whitten-Gilmore company will go out of business entirely and the partnership of Ernest A. Gilmore and Charles E. Whitten will be dissolved. Whitten has the agency for a line of cars and trucks at Lynn, Mass., that he will continue. Gilmore will take a vacation for some weeks before he does anything.

Dealer, Too, Adopts Bonus Plan.

The C. T. Silver Motor Co., like the Ford Motor Co., has inaugurated a conditional price reduction plan in connection with its 1915 sale of Overlands. If the sales by August 1, 1915, total 2,500 cars $50 will be rebated to each buyer and a further rebate will be made if the sales reach 3,000. This will entail a disbursement of about $125,000. Silver believes his sales for the year will exceed 3,000.

Electric Vehicle Show October 7-17.

An Electric Vehicle Show will be held in Grand Central Palace, New York city, October 7 to 17, starting on Wednesday evening and closing on the second following Saturday night. The show is under the direction of Charles Parker, of the New York Edison Co.

NEW YORK CITY DEALERS OPTIMISTIC AT OUTLOOK

Have Bettered 1913 by 50% and Trade Is Lively—Many Report Large Increases During Year Just Ended.

Dealers in New York city report that during the 1914 selling year business has been about 50 per cent better than in 1913; many of them are sold out and are having calls for the 1914 product which they cannot fill.

The territory of many of these dealers in many cases includes the more populous portion of Northern New Jersey, all of Long Island, part of Connecticut, several New York counties north of New York city and, in some instances, a county in Pennsylvania. All of them are looking forward to a good year with the 1915 cars.

The Buick Motor Co.'s branch was sold out May 1, two months earlier than last year; it sold 360 1914 cars, has already disposed of 100 1915 models and has a standing order for 100 more. On July 23, 18 cars were sold—the largest day's sale in the history of the branch.

Car-Nations to the number of 64 have been sold to date. This, of course, is a new product and selling was not begun until May 15.

The Chalmers agency reports a 50 per cent increase over 1913.

The Detroit-Cadillac Motor Co. of New York is 60 per cent ahead of last year and customers continue to call for 1914 cars.

The Chandler Motor Car Co. states that June was the largest month it has had. The agency has been in business only about 11 months and has handled about 10 per cent of the factory output, amounting to 250 cars; July sales exceeded June.

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Fifty per cent more Fords were sold than last year.

In the first seven months of 1914, the A. Elliott Ranney Co. sold twice as many Hudsons as were sold in 11 months of 1913; it wholesaled 868 and retailed 146. This increase is attributed to the reduction in the price of the light six.

Charles E. Reiss & Co. sold and delivered 300 Hupmobiles during June in its territory, an increase of about 200 per cent as compared with June, 1913.

The Whitney Motor Co., which handles the Mercer, has cut down the number of trades considerably, and the total sales exceed those of last year to date.

The Drouet & Page Co. reports a big increase in Mitchells; 300 were sold during the first half of the 1914 calendar year as compared with 125 during the entire 12 months of 1913. If continued throughout the year this will amount to a gain of about 300 per cent.

The Marmon Co. of New York is sold out, 57 cars having been disposed of since March 1.

The Moon Motor Car Co. moved 182 cars from January to June; 41 per cent better than last year.

The C. T. Silver Motor Co. has ordered 3,500 cars for the coming season; it handles Overland, Peerless and Knight cars. The total sales are 33 1/3 per cent better than 1913. The company has handled the Peerless only since January last and took over the Willys-Knight a few weks ago.

The Stewart Automobile Co. gained 25 per cent on Pullmans during the first half of the year; it sold 75.

The Packard branch was sold out in May. The truck business was exceptionally good, the sales up to July being greater than those of any other year.

The Gotham Motor Car Co. increased its S. G. V. business 10½ per cent. A. G. Spalding & Bros., Stevens-Duryea, is about two months ahead of its 1913 business. Closed car sales were especially good. The Locomobile branch reports one of the best years in its history.

The Garland Automobile Co. sold 75 Velies in 1913 and 150 in 1914, doubling its business; the truck trade was good. White sales increased.

The Cutting-Larson Co., Oldsmobile, gained approximately 15 per cent; it sold 185 cars in 1913, 215 in 1914, and has 60 orders already for 1915. It has contracted for 850 fours and 250 sixes. The reduction in price has helped business.

Partridge, Clark & Kerrigan, which has been in business but a few months, reports satisfactory conditions. This firm handles the Premier, Briscoe, Lexington, Pathfinder and Ford.

HENDEE SAYS HE IS NOT PLANNING TO BUILD CAR

Indian Motorcycle Man Says He Will Stick to "Two-Wheeler"—But the Company Has Experimented With a Car.

Hastening to head off a rumor that it is going to manufacture a light car, the Hendee Mfg. Co., Springfield, Mass., maker of the Indian motorcycle, has taken exception to a statement published in daily newspapers that it was about to embark on a light car project. The company states that it has built an experimental car but will go no further with the matter.

George M. Hendee, president of the company, in a statement regarding the situation, said:

"A Springfield paper on July 28 printed a story to the effect that the Hendee Mfg. Co. is about to enter into manufacturing motor cars in large quantities to sell at a popular price. This story was as much of a surprise to us as it was to any of the readers of that paper, and was published without any foundation or facts.

"We wish to state emphatically that the Hendee Mfg. Co. has no intention of manufacturing automobiles or marketing them. While it is a fact that we have built a model car, that is as far as it will ever go with us, and we trust that you will not fall for any rumor, as our plant is devoted entirely and solely to the manufacture of Indian motorcycles."

Pope Sale May Be Held.

The appeal of the Boston creditors' committee from the original order of Judge Holcomb allowing Receiver George Pope to sell the property at his discretion as to prices, has been withdrawn and it is understood that about $40,000 worth of the machinery and material can be disposed of immediately. The court order, allowing Receiver Pope to conduct the manufacturing business expires August 20 and the factory will close at that time.

Minneapolis Has Cyclecar Company.

The Brasie Motor Car Co., Minneapolis, Minn., has ben incorporated at $100,000 to build pleasure cars and trucks. It succeeds the Brasie Motor Truck Co., which manufactured the Twin City truck; the new company, which is located at 2743 Lyndale avenue, South, will make a cyclecar pleasure car, cyclecar delivery car and a trailer for parcel delivery service.

J. M. Michaelson, formerly maker of the Minneapolis motorcycle, the Shapiro-Michaelson motorcycle and the Michaelson cyclecar, is secretary and will have charge of sales and advertising. F. R. Brasie, president and treasurer, will control the purchasing and shop.

Deliveries of trucks has begun, cyclecar deliveries will begin in 30 days and pleasure cars in 60 days. The latter is to be known as the Messenger and the former as the Packet.

The Twin City truck chassis will be continued at two-ton capacity at $1,350, with body to suit purchaser.

"Drive Away" Day Studebaker Feature.

"Drive Away" days have been made a part of the season's boosting and selling plan by the Studebaker corporation. On these occasions dealers from different territories go to the factory in special trains and drive home in new cars. The lastest "Drive Away" day was July 29, when 235 dealers from Chicago territory drove away in the afternoon with 1915 demonstrators. A stop was made at South Bend, where the dealers visited the Studebaker plants in that city. On the way home with the new cars the dealers kept in line until they reached South Bend, 170 miles from Detroit, a stunt which attracted considerable attention along the route.

New York Taxicab Competition Appears.

The International Cab Co. will on October 1 begin operating taxicabs in New York city with charges of 25 cents for the first half mile and 5 cents for each additional quarter mile, making 35 cents for the first mile and 25 cents for additional miles. P. J. Holdsworth, formerly manager of the Yellow Taxicab Co., will be general manager of the new service.

Upon the heels of this announcement is the statement that the Mason-Seaman Transportation Co. will put 200 taxicabs into service at about half its regular rates.

Fischer Car To Have Larger Motor.

Since the publication of the description of the light car which is being placed on the market by the C. J. Fischer Co., Detroit, Mich., which appeared in Motor World for July 15, some change has been made in the plans of the company with regard to the motor that will be used. Instead of a motor with a bore and stroke of 2¾ x 4 inches, it has now been decided to use a motor measuring 2⅞ x 4½ with a three-bearing crankshaft.

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GOODRICH'S NET PROFITS IN PAST YEAR $2,600,000

Company Not Only Pays Dividends But Is Enabled to Retire $900,000 of Its Outstanding Preferred Stock.

The net profits of the B. F. Goodrich Co., Akron, O., during the first six months of 1914 were in excess of $2,600,000, according to a financial statement by the company. Besides paying its April dividend the company was able to appropriate $800,000 for the retirement of $900,000 of its preferred stock. The company's statement follows:

"The books of the B. F. Goodrich Co. were closed on July 1 for the purpose of determining the results of operations for the first six months of 1914. They have not been audited by public accountants, but the company's auditor has just submitted to the directors a statement of earnings for the period.

"After making proper allowances for maintenance, depreciation, bad debts and all known outstanding liabilities, etc., the net profits for the period amount to approximately $2,651,278. This amount, added to the surplus carried over December 31, 1913, shows undivided profits of approximately $2,307,261, after deducting the regular April and July dividends on the preferred stock.

"From this amount the company has appropriated an amount sufficient to retire $900,000 par value of preferred stock. The amount of quick assets over current liabilities shows a gain of approximately $1,628,508 for the period."

Big Earnings for General Motors.

The General Motors Co. ends its fiscal year with gross earnings of between $90,000,000 and $92,000,000, an increase ot 40 per cent in two years, and with net profits of about same amount as in 1913 when the balance for the stock was $8,184,052. If profits fall below $8,000,000 it will be decidedly contrary to the expectations of directors entertained up to the present time.

The company needs less than $1,800,000 to pay interest on its notes and the 7 per cent preferred dividend. If net profits were to be cut in two, the company would still earn 15 per cent on its common stock.

The company cash position is 100 per cent better than a year ago and its debts are almost nil. It looks forward to an ncrease in production during the coming year. This, it is estimated, means an output of over 60,000 of the principal cars.

Studebaker Liabilities Shrink $2,216,000.

Net earnings of the Studebaker Corporation for the six months ended June 30, after fixed charges, depreciation, etc., and before dividends, amounted to $3,027,844. The net earnings, on the same basis for the full year 1913, before dividends, amounted to $1,904,413.

The liabilities during the period have been reduced by $2,216,000. The cash on hand amounts to $3,228,000.

The net earnings after charges and depreciation of $3,027,844 reported by the Studebaker Corporation for the six months ended June 30, 1914, is equal to 9.2 per cent on the common stock after deducting preferred dividends or at the rate of 18.4 per cent for the year. This compares with 3.59 per cent earned on the common stock for the year.

Two New Ones In New England.

Two more automobile plants have been added to those established in Massachusetts. The Sterling Motor Co., Brockton, Mass., announces that it will start at once to build the first 1,000 of a 5,000 product at its new factory on Centre street. The company will produce a small car fully equipped to sell for $650.

A syndicate comprising Boston, Springfield and Philadelphia men, two of whom are veterans of the motor industry, has been formed and a lease taken of the old Grout Automobile Co.'s plant at Orange, Mass., where operations will be started in a few weeks on light delivery trucks and cyclecars.

Wagenhals Making Package Car.

The Wagenhals Motor Car Co., Detroit, has completed and is testing an experimental model of a smaller edition of the three-wheeled Wagenhals package delivery vehicle. The new parcel-car has a four-cylinder, 2¾ x 4, four-cycle motor and a carrying capacity of from 400 to 500 pounds. It is stated that the price will be about half that of the present model, which sells for $690. The company has not announced its plans for the little vehicle, as these will depend largely upon the tests, but it may be ready some time in the fall.

The Motor Car Securities Quotations do not appear in Motor World this week owing to the fact that the New York Stock Exchange has been closed because of the European war situation.

LOCOMOBILE ASSETS GROW HALF MILLION IN A YEAR

Statement of Bridgeport Company Shows Better Standing Than Was Revealed a Year Ago—Details of Balance Sheet.

The assets of the Locomobile Co. of America are more than $600,000 greater than at the close of the 1913 fiscal year, according to a statement of the company as of May 31, 1914, just made public. Of this total, real estate comprises $1,992,638 and merchandise $3,872,342. The largest liability is capital stock, $6,250,800. The funded indebtedness amounts to $2,186,673. The statement as issued follows:

Assets—	1914	1913
Real estate	$1,992,638	$1,924,092
Merchandise	3,872,342	3,696,751
Mfg. mdse., material and stock in process	911,447	
Cash and debts receivable		1,038,979
Good-will, trade marks, patent rights	*5,305,892	4,986,460
Sundry	217,354	
Total	$12,299,673	$11,646,291
Liabilities—		
Capital stock	$6,250,800	$6,250,800
Accounts payable	293,228	512,463
Reserves	323,529	
Funded indebtedness	2,186,070	1,460,504
Profit and loss surplus	906,046	749,425
Total	$12,299,673	$11,646,291

*Includes cash and debts receivable.

Minneapolis Hopes For Speedway.

Capitalists have put under way a plan to build a two-mile brick motor speedway within a short distance of the city limits of Minneapolis to cost $500,000, and to be ready by the fall of 1915. J. D. Hogan and William D. Hogan, real estate men, and closely associated with other capital, are back of the plan, and Orin Kellogg is connected with the enterprise, which will be put on a bond or stock selling basis.

After studying four different sections of the surrounding country of the Twin Cities, the Hogans have obtained a half section of land in Anoka county, within reach of the street car lines, not far from railroad lines and on the boulevard system of Hennepin and Ramsey counties, thus bringing both Minneapolis and St. Paul in close touch by automobile roads as well as traction lines. Little excavation is necessary as the land is comparatively level.

Cincinnati May Get a Speedway.

Cincinnati, O., is the latest city to have hopes of a motor speedway; the Cincinnati Motor Speedway Co. has been incorporated at $100,000 for the purpose. The incorporators are W. T. Foley, F.

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D. Hirst, T. A. Tauwald, Jr., C. A. Ginter and A. H. Morrill.

Klaxon Gets a New Patent.

The United States Patent Office has issued to the Lovell-McConnell Mfg. Co., Newark, N. J., maker of Klaxon, Klaxonet and Klaxet warning signals, patent No. 1,105,324, on application filed July 10, 1911. The claims of this patent cover the motor case with screw-thread and locking ring adjustment, which, the Klaxon company states, is a part of the Sparton horns and of the Sparks patent No. 1,048,436, granted December 24, 1912.

It is claimed by the Lovell-McConnell company that the application on which the present patent was granted was filed 10 months before Sparks filed his application. Lovell-McConnell has brought suit in the Federal court for the Southern District of New York for infringement of this patent against the General Automobile Supply Co., a New York dealer in Sparton horns.

Northwestern Dealers to Convene.

Northwestern motor car dealers will gather in Minneapolis September 10-11 for the first annual meeting of the Retail Auto Dealers' Association, formerly the Minnesota Retail Auto Dealers' Association. The organization now includes dealers from the Dakotas, Montana, Northern Iowa and Western Wisconsin.

The delegates will be on hand state fair week and will take part in a motor car parade, each to decorate the car in which he rides overland to the meeting. The preparations are in the hands of Alban Bodine. The officers are: President, C. W. Jewett, Bemidji, Minn.; secretary, P. C. Frazee, Pelican Rapids, Minn. Plans for enlarged usefulness will be taken up.

Unit Coil Scores Over K-W.

The motion of the K-W Ignition Co., Cleveland, O., for a new appeal in the suit brought by the Unit Coil Co., Jersey City, N. J., has been denied by the United States Circuit Court of Appeals in Ohio. The Unit Coil Co. charged infringement of the Willard E. Dow patent, No. 752,384, dated February 16, 1904, for an electrical igniter for explosive engines, and the Reuben Willard, Jr., patent, No. 754,666, dated March 15, 1904, for an induction coil.

The defendant was ordered to pay a royalty of 50 cents on each one of its Master Vibrators manufactured since March 1, 1912, and to continue this payment, the injunction against manufacture not to take effect if this condition is complied with.

ENTRY LIST FOR ELGIN CONTINUES TO INCREASE

Seventeen Cars Are Now Entered—Course Being Put Into Fast Condition—Apprehension Regarding De Palma.

Three Mercers have been added to the entry list of the Elgin road races, August 21-22, bringing the total number of cars to date to 17. Two of the Mercers come from the company direct, the drivers nominated being Spencer Wishart and Ed Pullen, while the third is nominated by Ed Schillo, Chicago Mercer dealer, who has engaged Charles W. Luttrell, of Chicago, as pilot.

A change of entry was made last week. W. H. Harris, inventor of the Harris drive, which does away with the differential, has bought one of the Marmons belonging to Charles E. Erbstein, a Chicago lawyer, and has taken over the entry. Mel Stringer will drive this. The 17, which are entered for both days, are:

Car and Entrant.	Driver.
Peugeot, E. J. Schroeder	Not named
Stutz, Stutz Motor Car Co	Oldfield
Stutz, Stutz Motor Car Co	Anderson
Sunbeam, W. Zeigler, Jr	Grant
Sunbeam, W. Zeigler, Jr	Babcock
Peugeot, L. C. Erbes	Burman
Marmon, C. E. Erbstein	Heinemann
Duesenberg, F. Duesenberg	Rickenbacker
Mercedes, E. C. Patterson	De Palma
Stutz, W. Zeigler, Jr	Dearborn
Braender Bulldog	Chandler
Duesenberg, F. Duesenberg	Not named
Marmon, W. H. Harris	Stringer
Tahis, F. Robinson	Roberts
Mercer, Mercer Automobile Co	Wishart
Mercer, Mercer Automobile Co	Pullen
Mercer, Ed Schillo	Luttrell

Considerable anxiety is felt over De Palma. He was scheduled to sail from a German port last Wednesday, bringing with him the Grand Prix Mercedes. He cabled Tuesday he was to get away the next day but it is not known whether or not his steamer was one of those recalled by wireless after the war broke out.

The Kane county course is being put in the best of shape. Already it has been oiled once and the second coat will be put on this week. It is expected that informal practice will start the latter part of this week.

New York Dealers to Hold Race.

The Motor Dealers' Contest Association, of New York city, at a meeting this week, decided to hold a matinee race-meet at the Brighton Beach track Labor Day, September 7. It is hoped to secure as entries a number of the drivers in the Elgin races, August 21 and 22. George Robertson is chairman of the racing committee and will receive entry blanks at 1789 Broadway.

Chambray Becomes K. C. B. Company.

The K. C. B. Co., Detroit, has been organized and incorporated at $200,000. This is a reorganization of the Chambray Carbureter Co. and the incorporators, Charles H. Bennett, John H. Chambers and Augustus A. Leslie are officers of the Chambray company. A new carburetter for heavy fuel is to be brought out.

U. S. L. Refinancing Under Way.

Plans are under way for the refinancing of the United States Light & Heating Co., Niagara Falls, N. Y., which recently was placed in the hands of receivers in equity. A. H. Ackerman, vice-president and general manager prior to the receivership, has been made general manager under the receivership. Assets are said to be three times the liabilities.

Firestone Workers Have Outing.

The employes of the Firestone Tire & Rubber Co., Akron, O., were given an outing by the company July 25 at Silver Lake Park. Ten thousand people attended; employes and members of their families were given free tickets to everything, including transportation. There were all kinds of sports and amusements.

Bowman Takes a New Home.

The Sidney B. Bowman Automobile Co., which has maintained salesrooms at 1600 Broadway, New York city, has leased a building at 1710-1712 Broadway, just north of West 54th street. The ground floor will be remodeled into a large showroom of modern form. The company handles the Oakland.

Changes Among Prominent Tradesmen.

C. E. Voorhis has resigned as assistant general manager of the Kingman Plow Co., Peoria, Ill., to become assistant sales manager of the Oakland Motor Car Co., Pontiac, Mich. Voorhis began business as a retail implement dealer in Kansas.

O. B. Henderson, for many years general sales manager of the Baker Electric Vehicle Co., Cleveland, O., has become vice-president of the Pacific Kissel Kar branch, with headquarters in Los Angeles. The branch handles the Ford and Baker electric, as well as the Kissel.

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ELECTRIC VEHICLE BODY TELLS CONVENTION PLANS

Interesting Papers Scheduled for Booster Association's Meeting in Philadelphia—Membership Grows Rapidly.

The Electric Vehicle Association of America, which has boosted its membership to 850—a gain of about 100 per cent—within a year, has prepared the program for its convention in Philadelphia October 19, 20 and 21. It now has organizations in New England, Chicago, Philadelphia, Washington, Cincinnati, San Francisco, Los Angeles, Pittsburgh, New York, Detroit, Cleveland and Toronto.

The president, Frank W. Smith, will address the convention, after which the following papers will be read:

Progress of the Electric Vehicle, by James H. McGraw.

Unusual Application of Electric Trucks, by F. Nelson Carle.

The Motor Truck in Terminal Freight Handling, by S. G. Thompson.

Electric Vehicles in Parcels Post Service, by W. P. Kennedy.

National Electric Light Association's Electric Salesman's Handbook, with Especial Reference to Electric Vehicle Section, by T. I. Jones.

Electric Industrial Truck (Symposium), by General Vehicle Co., C. V. Hunt Co., Automatic Transportation Co., Elwell-Parker Co.

Educating the Public to the Field and Use of the Electric Vehicle, by F. C. Henderschott.

Electric Fire Apparatus, by Chief Walker, Philadelphia Fire Department.

Additional papers are to be announced from time to time.

Further particulars available upon application to executive secretary, Electric Vehible Association of America, 29 West 39th street, New York City.

Michigan Brass to Battle Creek.

The Michigan Brass & Foundry Co., Detroit, which was purchased recently by capitalists of Battle Creek, Mich., is now being moved to the latter city.

Newtone Into Suit Against Dealer.

The Automobile Supply Mfg. Co., Brooklyn, N. Y., the Newtone horn manufacturer, has been made a party defendant in the suit brought by the Lovell-McConnell Mfg. Co., the Klaxon horn manufacturer, against Julius Bindrim, a Brooklyn supply dealer, selling Newtone and Newtone Superior horns. The Klaxon maker claims infringement of letters patent No. 1,094,403, granted April 21, 1914.

Norwalk and Dealer at Odds.

The Norwalk Motor Car Co. of New York has brought suit in the United States District Court in New York city asking that the Norwalk Motor Car Co., of Martinsburg, W. Va., be restrained from shipping Norwalk cars into the New York city territory. The New York Norwalk company had a distributer's contract, which the manufacturer determined to terminate because of alleged violations of the agreement. The matter will be heard September 8.

New York Has Flag Traffic Plan.

Regulation of traffic by means of flags has been tried out in New York city on Fifth avenue. A traffic officer at Fifth avenue and 42nd street was the key to the situation during the test; by raising a flag the direction of traffic was indicated and the same signals were given on other corners within view of the man with the flag; thus causing traffic to flow north and south at the same time and east and west at the same time on streets within the signalling area.

Bennan Heads Detroit E. V. A.

J. W. Bennan, of the Edison Illuminating Co., Detroit, Mich., was elected chairman of the Detroit section of the Electric Vehicle Association of America at a meeting which was held July 21. The other officers elected were: W. J. Gordon, of the Century Electric Car Co., vice-chairman, and L. C. Smith, of the Carl M. Green Co., secretary.

Holds Monthly Used Car Sales.

The Claypool Garage Co., Indianapolis, Ind., one of the largest in the city, will start a series of monthly auction sales of used cars beginning August 8. The company is advertising that it will purchase for cash used cars and will also sell any car which owners may want to have sold on a commission basis.

Motor Club Elects Its Officers.

The Motor Club, Inc., which recently was formed in New York city to provide a social trade organization, has elected the following officers: S. S. Toback, president; E. C. J. McShane, first vice-president; William C. Poertner, second vice-president; James C. Nichols, treasurer; Edward F. Korbel, secretary; and Merle L. Downs, assistant secretary.

PACKARD DEALERS HOLDING A SPECIAL SALES SESSION

Sales Problems to Be Treated and Dealers and Factory to Play Ball—Will Drive Demonstrators Home.

More than 100 dealers and salesmen from 60 cities will attend a Special Sales Session which is to be held at the Packard Motor Car Co.'s factory in Detroit, August 5 to 7, inclusive. Talks will be given by department heads and sales problems will be discussed generally. Assistant Sales Manager Arthur E. Corbin will outline the various changes in the new "3-38."

The dealers and the factory will play a ball game at Belle Isle. The steamer Sappho has been chartered for a moonlight excursion on Lake St. Clair and a vaudeville program will be given on board. After the outing "3-38" demonstrators will be driven overland by the dealers.

The Packard company reports that the first six months of 1914 constitutes one of the largest sales periods in its history; the value of the output totaled $7,000,000.

Partin To Use Staver Plant.

The Partin Mfg. Co., Chicago, Ill., which a short time ago drew additional attention to itself by the announcement of a light, 22-horsepower model selling at $495, has acquired the large plant formerly operated by the Staver Automobile Co. This plant is located at Auburn Park Station, Chicago, and will permit the Partin output to be practically trebled. In addition to the small car the company produces a larger model which sells for $975.

Dodge Bros. to Employ 10,000 Men.

Dodge Bros, Detroit, Mich., will put about 10,000 men to work beginning October when a million dollar addition to the plant will be completed. This consists of a four-story assembly room, 1,000 feet long and 70 feet wide, and a press punching building. Machinery worth $300,000 will be installed.

Whitney Locates in Philadelphia.

H. C. Whitney, a pioneer in the trade and formerly Alco dealer in New Orleans, La., has been appointed general sales agent of the Garford Philadelphia Co., which handles the Garford truck and Willys-Overland pleasure and utility cars.

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New Demonstrator Department

Dealers Who Have Received New 1915 Cars.

In these opening days of the new season dealers' conventions are being held at many factories. Invariably a principal topic of the day is the new car and every dealer is anxious to get a demonstrating model into his territory and get it working. It is an opening move of the campaign. Below are some of those who have received the new cars.

King Motor Car Co., Detroit, Mich., has shipped demonstrators to:

Dealer.	Place.
Auto Inn & Exchange	Columbus, O.
Alexander Bennie & Co., Inc.	Nashville, Tenn.
F. H. Bardshar	Seattle, Wash.
B. A. Burzette	East Aurora, N. Y.
W. W. Bennett Motor Car Co.	Pittsburgh, Pa.
Wm. P. Barnhart & Co.	Washington, D. C.
F. X. Bowman	McKean, Pa.
Dunham Motor Co.	Cleveland, O.
Ferdinand Crosby	Syracuse, N. Y.
Coxe Motor Sales Co.	Birmingham, Ala.
A. Z. Campbell	Mt. Pleasant, Mich.
Central Garage	Jacksonville, Fla.
Diamond Motor Co., Ltd.	Calgary, Alta.
E. A. Christiansen Auto Co.	Sioux City, Ia.
Eckhardt & Hilleman	State Center, Ia.
Fuselier Motor Car Co.	Alexandria, La.
W. J. Fitton & Co.	Indianapolis, Ind.
Guarantee Motor Car Co.	San Antonio, Tex.
A. E. Hill	Olney, Ill.
Hease Bros.	Zearing, Ia.
Holsman Sales Co.	Des Moines, Ia.
Hawkeye Distributing Co.	Cedar Rapids, Ia.
Heinrich Automobile Co.	St. Louis, Mo.
King Motor Sales Co.	Detroit, Mich.
King Motor Sales Co.	Pittsburgh, Pa.
Fred Klopfanstein	Utica, N. Y.
Martin Motor Sales Co.	Minneapolis, Minn.
Moffitt & Kneuss	New Philadelphia, O.
Monarch Hardware Co.	Sharon, Pa.
Phelps Auto Sales Co.	Grand Rapids, Mich.
Raleigh Motor Car Co.	Raleigh, N. C.
Wm. R. Ruess	Los Angeles, Cal.
August Stef	New Orleans, La.
Schreiber-Boorse Motor Car Co.	Milwaukee, Wis.
Shoemaker-Bale Auto Co.	Little Rock, Ark.
Schultze & Toppins	New Salem, N. D.
J. Ralph Seidner	Youngstown, O.
Chas. H. Wakeman	Lestershire, N. Y.
S. R. Wainwright	Port Byron, Ill.
Maumee Motor Car Co.	Toledo, O.
E. S. Bostick	Meridian, Miss.
Great Western Motor Sales Co.	Quincy, Ill.
Pontiac Motor Sales	Pontiac, Mich.
Walterboro Garage	Walterboro, S. C.
Wright & Mitchell	Swift Current, Sask.
Alliance Motor Supply Co.	Alliance, O.
Geo. W. Carter	Mahomet, Ill.
H. J. Gallagher	Darlington, Wis.
Jos. Hall	Brownwood, Tex.
Julius Jordan	Aurelia, Ia.
Ohnhaus Automobile Co.	Ft. Wayne, Ind.
E. E. Wilkins	Duck Hill, Miss.
Washington Garage	Washington, Ill.
Artemas Ward	Boston, Mass.
Artemas Ward	New York, N. Y.
Mason Butler Co.	Radcliff, Ia.
A. L. Hoag	Lockport, N. Y.
Diamond Motor Co., Ltd.	Wellington, N. Z.
Phenix Furniture Co.	Georgetown, S. C.

Knox Motors Co., Springfield, Mass., has shipped tractor demonstrators to:

Dealer.	Place.	Model.
C. F. Rouze,	Kansas City, Mo.	31 and 32

Pullman Motor Car Co., York, Pa., has shipped demonstrators to:

Dealer.	Place.	Model.
Erie Penn Auto Co.,	Erie, Pa.	6-48
H. L. Lamprey,	Manchester, N. H.	6-48
Peter Welin,	Worcester, Mass.	6-48
Todd's Garage,	Toronto, Ont.	4-36
Granite State Garage,	Dover, N. H.	4-36
Auto Sales Co., Inc.,	Charlotte, N. C.	6-48

Speedwell Motor Car Co., Dayton, O., has shipped demonstrators during the past week to:

Dealer.	Place.	Model.
Curtis-Hawkins Co.,	Boston, Mass.	C
Speedwell Motor Car Co. of Ill.,	Chicago	C
Karshner Motor Car Co.,	Kansas City, Mo.	C
Speedwell Motor Co.,	Portland, Ore.	C

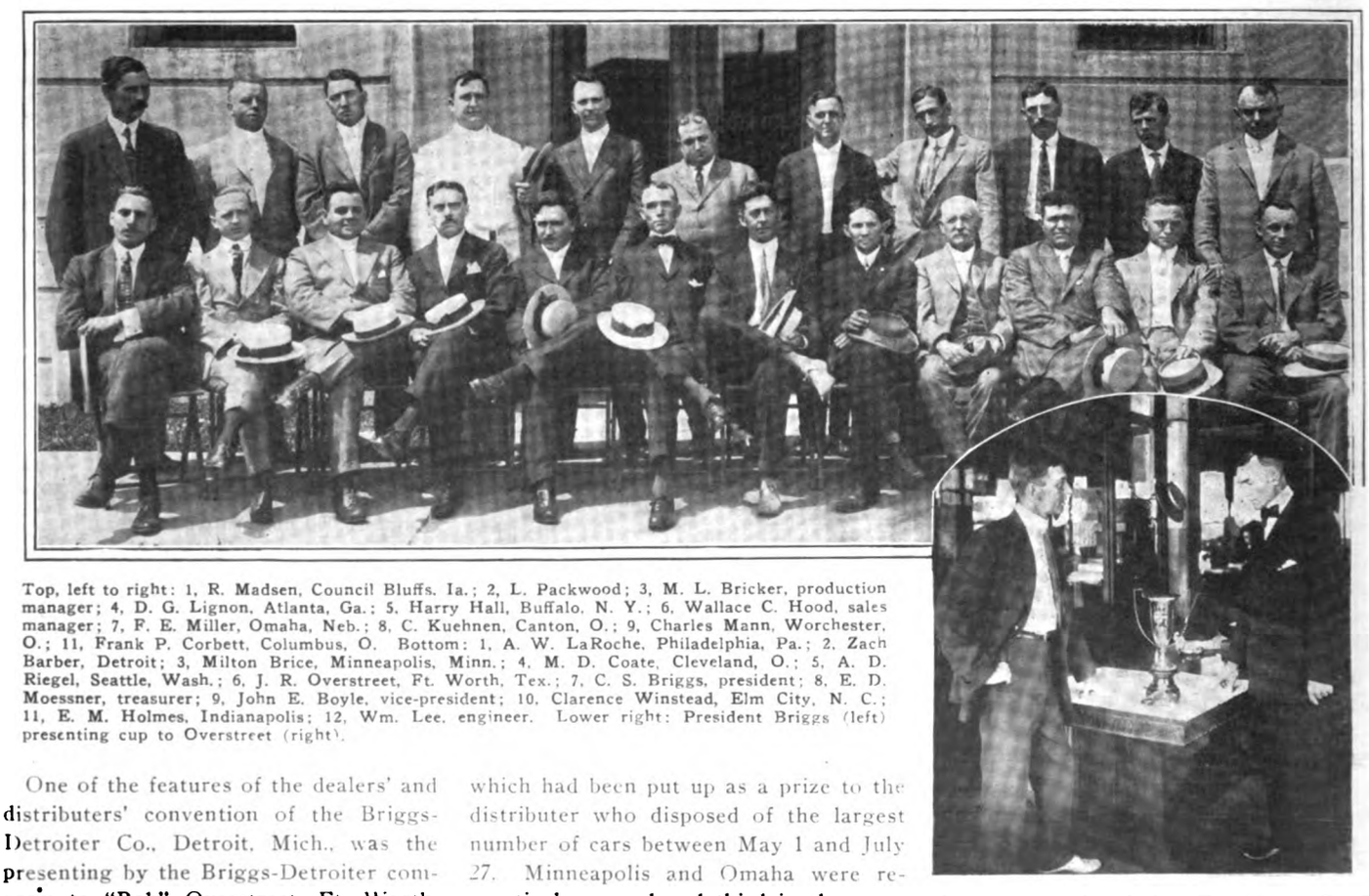
Forms Legal Aid Department.

The Motor Truck Club of America has plans to operate a Legal Aid Bureau during the coming year. It will distribute copies of laws to club members, establish a school of instruction for drivers, appear in court for traffic offenders, act as legal adviser, recommend support or condemnation of proposed legislation, prepare proposed laws, gather statistics and act generally in behalf of club members.

Two Clubs to Hold Outings.

The Big Village Motor Boosters, New York city, will hold its annual outing on Fred J. Wagner's farm, Smithtown, L. I. The second annual outing of the New York Division of the Motor Truck Club of America will be held August 18 at the Marine and Field Club, Bath Beach.

BRIGGS-DETROITER DEALERS GATHER AT FACTORY IN ANNUAL CONVENTION



Top, left to right: 1, R. Madsen, Council Bluffs, Ia.; 2, L. Packwood; 3, M. L. Bricker, production manager; 4, D. G. Lignon, Atlanta, Ga.; 5, Harry Hall, Buffalo, N. Y.; 6, Wallace C. Hood, sales manager; 7, F. E. Miller, Omaha, Neb.; 8, C. Kuehnen, Canton, O.; 9, Charles Mann, Worchester, O.; 11, Frank P. Corbett, Columbus, O. Bottom: 1, A. W. LaRoche, Philadelphia, Pa.; 2, Zach Barber, Detroit; 3, Milton Brice, Minneapolis, Minn.; 4, M. D. Coate, Cleveland, O.; 5, A. D. Riegel, Seattle, Wash.; 6, J. R. Overstreet, Ft. Worth, Tex.; 7, C. S. Briggs, president; 8, E. D. Moessner, treasurer; 9, John E. Boyle, vice-president; 10, Clarence Winstead, Elm City, N. C.; 11, E. M. Holmes, Indianapolis; 12, Wm. Lee, engineer. Lower right: President Briggs (left) presenting cup to Overstreet (right).

One of the features of the dealers' and distributers' convention of the Briggs-Detroiter Co., Detroit, Mich., was the presenting by the Briggs-Detroiter company to "Bob" Overstreet, Ft. Worth, Tex., of a silver bowl and $500 in gold which had been put up as a prize to the distributer who disposed of the largest number of cars between May 1 and July 27. Minneapolis and Omaha were respectively second and third in the competition. The convention ended with a banquet tendered by President C. S. Briggs at the Detroit Boat Club.

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The High Cost of Service

Service, the giving of something to the man who has bought a car of the dealer, which was and is held up by men who sell cars as a sales inducement, has grown from a selling point to a bugbear in many cases.

Service? Do we give it? Yes, says the dealer; yet in every corner of the car retailing trade there is an undisguised tendency to limit service, to make it less, to cut it down and make the car owner pay for more and more of what he gets.

It is a proper tendency—a worthy one. No man in business should perennially donate to another the profits which are essential to make the business thrive. Of course, a certain degree of service is a legitimate advertisement—another degree, be it too much or too little, is an advertisement of a different type.

Efficient Work Plugs the Leaks

When the dealer sees his service department operating at too big a cost it is a matter for serious deliberation; it is a leak to be stopped.

By "limiting service" the dealer in every case means cutting down the expense of service to himself; he does not mean giving the car owner less; he means making it cost himself less.

And it can be done.

Just as every big corporation is cutting out the waste moves and making each movement count for its most, every dealer, repairman and garageman can increase the margin between cost and selling price of repairs and service. If the service is free it can be made to cost the dealer less.

It is not only in selling and office methods that efficiency can be gained; there is a big field for it in service work, and the one way to get it is to study the methods of other men.

Every mechanic has methods which are to a degree his own; some mechanic has a method which is best.

If it is a fender which is to be fixed for a customer and at some point of the repair the workman makes the wrong move the job may require many hours of labor—wasted capital—costly service! Had it been done the right way all the way through the work could have been performed at its minimum expense of materials and labor.

Knowledge vs. Rule-of-Thumb

Knowing how to do every job in the best, the quickest and the easiest way is not the fortune of the average man who makes repairs. Many of them have learned their lesson in the School of Rule-of-Thumb, where the teacher is Tradition and the diploma is Average.

Were the army of men in the trade's repair-shops and service stations able to visit the other shops in the trade they could learn much; each man would see some other man who had an improvement on the standard way of doing some particular thing. As it is every repairman may do much to make himself a better repairman if he keeps his eyes open to what is done about him and profits by what he sees.

The dealer who operates a service department is obliged to depend in many cases upon his service superintendent. He looks to this man to keep the wheels of the service system running smoothly and at lowest cost. Yet the cost of service is often high.

It was with this object in view that Motor World inaugurated its Advanced Maintenance Department. It was to help not only the man who has a service department but every garageman and repairman who would cut his costs and make his profit greater..

Right Methods Cut the Cost

The repair problems of this department are not what the average repairman might call difficult. The department does not have to do—as yet—with rebuilding axles and redesigning motors. The tasks are the simple every-day tasks which appear insignificant yet are of tremendous importance.

Soldering a radiator is a "little" job, yet there is a way which is right and of assured success and there is another way which would leave a stain forever upon the service of the dealer. Fixing a damaged fender may appear easy, yet there are little kinks and angles to the work that are exceedingly important. This subject is being treated now—in this issue.

The man who dissects these problems is an expert and an engineer. Being capable of the bigger things, he is able to handle the "little" things. And he knows—for he has done them. The repairman who wishes to make his work more efficient will find abundant aid here. And anything he wishes to know will be told.

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Chalmers Raises Prices on Whole 1915 Line

Minimum Increase $50—Maximum $225—Rayfield is Now Equipment.

Two six-cylinder cars constitute the 1915 line of the Chalmers Motor Co., Detroit, Mich., as in 1914, and their relative sizes are broadly indicated by their designations—the light six and the master six. The light six carries five- and six-passenger touring, limousine, coupelet and sedan bodies, and the heavier chassis mounts seven-passenger touring and phaeton bodies.

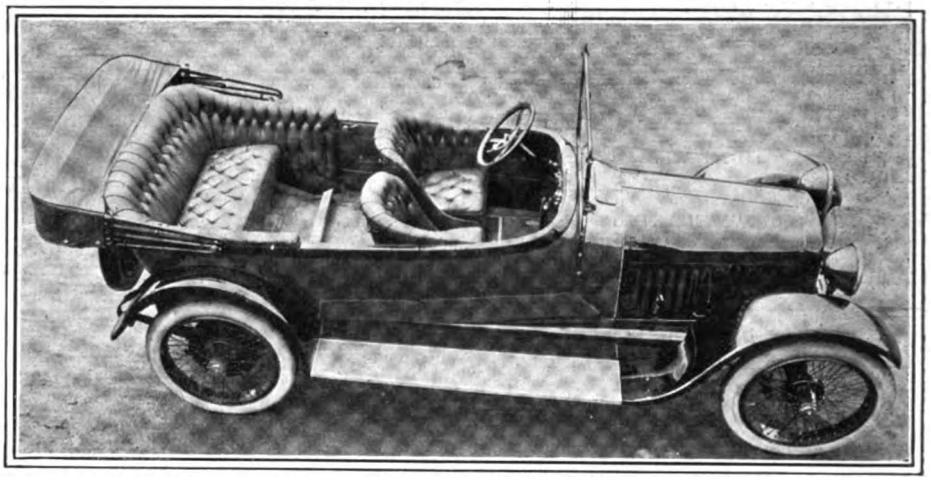
There has been an increase in prices in bringing out the new series. The light six with 5-passenger touring body costs $1,850 and with 6-passenger body $1,900, in each case an increase of $50 over the 1914 figures. The master six with either phaeton or 7-passenger body costs $2,400; in 1914 the phaeton cost $2,175 and the 7-passenger $2,275. The light six chassis also mounts a limousine at $3,300, a coupelet at $2,100 and a sedan at $2,850.

All models are provided with the usual full equipment of top, cover and curtains, rain-vision ventilating windshield, electric horn, speedometer with Empico drive, pump, jack, full set of tools and tire carrier.

SPECIFICATIONS OF CHALMERS 1915 LINE.

Price:	Light Six.	Master Six
Touring, 5-passenger	$1,850	
6-passenger	1,900	
7-passenger		2,400
Limousine	3,300	
Coupe	2,100	
Sedan	2,850	
Phaeton		$2,400
Color	Black chassis Blue body	Black chassis, Blue body
Make of motor	Chalmers	Chalmers
Number of cylinders	6	6
Shape	T-head	T-head
How cast	Block	Three
Bore	3½	4
Stroke	5½	5½
S. A. E. rating	29.4	38.4
Ignition	Atwater-Kent	Bosch magneto
Carburetter	Rayfield	Rayfield
Starting-lighting system,	Chalmers-Entz	Chalmers-Entz
Clutch	Disk, cork inserts	Disk, cork inserts
Gearset	3-speed	4-speed
Wheelbase	126	132
Tires	34 x 4	36 x 4½
Wheels	Wood	Wood
Steering	Left	Left
Control	Center	Center
Make of axles	Chalmers	Chalmers
Type of rear axle.	Full float.	Full floating

Equipment: Chalmers special top, with cover and side curtains, rain-vision ventilating windshield, speedometer with Empico drive, electric horn, jack, pump and set of tools and tire carrier.



UNUSUAL FREEDOM IS PERMITTED IN THE BODY BY THE AMPLE DIMENSIONS. FLUSH SIDES ALMOST CONCEAL DOORS

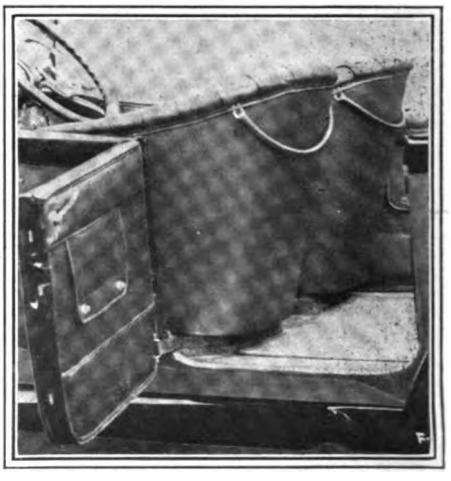
Both the Chalmers motors are of the T-head type, and while there is much similarity between the two engines they differ in that the smaller is block-cast while the larger has its cylinders cast in threes.

The cylinder dimensions, 4 x 5½ for the larger car and 3½ x 5½ for the smaller, are unchanged; the S. A. E. ratings are 38.4 and 29.4 respectively. Slight changes have been made in the core work with the result that the water jacket space has been somewhat increased in both models.

The carburetter now used is the Model G Rayfield with two jets and three air openings, one of which is fixed and the other two governed according to the requirements of the motor. The primary jet supplies all the gasolene while the motor is idling. As soon as it picks up sufficient speed to open the auxiliary air valve, a metering pin which is interconnected with this air valve comes into operation and the secondary jet is opened. The air valve operates on a dashpot chamber formed by a piston in the bottom of the carburetter, which works through the gasolene. There are only two adjustments on the carburetter, one for high and the other for low speed.

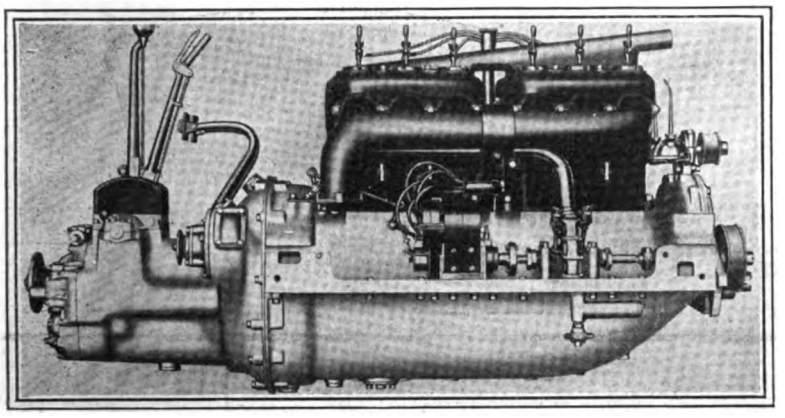
Each piston is fitted with four rings, each ring made up of two parts, the outer section being formed of a number of segments pressed outward by flat springs. All valves are of tungsten steel and the two camshafts have integral cams. The valves in the small six have a diameter of 1 15/16 inches and in the big six 2⅛ inches.

Lubrication is essentially the same as in the 1914 Chalmers, though the flow of oil to the main bearings has been considerably increased by making the conduits larger. A gear pump in the crankcase takes oil from the reservoir and forces it through a long lead that runs the entire length of the crankcase. Branches lead to each of the main bearings and as the amount of oil delivered is greatly in excess of the requirements of the bearings, the overflow is sufficient to keep the troughs under the connecting rods filled up. The oil is splashed by scoops on the ends of the connecting rods, as usual, and the surplus is returned to the bottom of the crankcase. An additional strainer has been placed in the lubricating system and is mounted on the side of the crankcase. All the oil circulates through this strainer and all foreign matter is removed by a screen cone. Should the screen cone become clogged so that oil

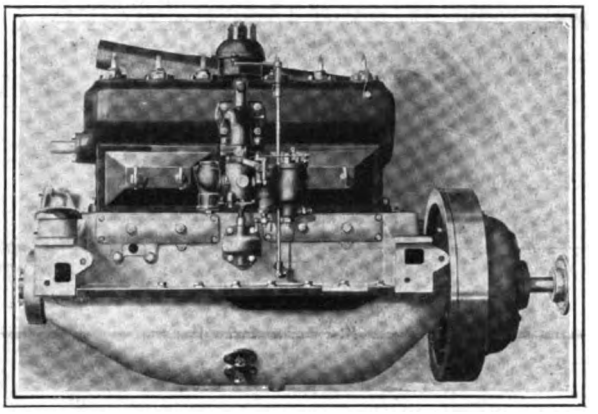


FRONT SEATS ARE INDIVIDUAL AND THE DOORS ARE WIDE

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THE MOTOR OF THE MASTER SIX HAS SIX CYLINDERS CAST IN THREES. THE WATER SPACES HAVE BEEN ENLARGED



RAYFIELD CARBURETTERS ARE NOW USED ON BOTH MOTORS—LIGHT SIX BLOCK CAST

cannot pass it can be by-passed through the top of the filter, though occasional attention to the screen will prevent such clogging.

In the case of the light six the Atwater-Kent ignition system is used, while in the larger car ignition current is supplied by a Bosch high-tension magneto. The starting-lighting system is, as heretofore, the Chalmers-Entz, in which a motor-generator unit is employed. This is located under the right front seat and drives through a short shaft, sprocket and silent chain to a sprocket on the flywheel. The starter will spin the engine at about 100 revolutions a minute, and when acting as a generator starts to charge the battery at a car speed of 8 miles an hour, attaining its maximum rate at 18 miles an hour when the output is 15 amperes.

The electric equipment, including the motor generator, is made largely in the Chalmers shops. A pressed steel bracket hung from the main frame carries the unit on the right side of the car and the battery is carried in a similar manner on the left side.

The type of clutch used on the new cars is unchanged; it is a multiple-disk with cork inserts, but now the disks are alternately bronze and steel, whereas in the previous cars all were steel. The gearset remains the same except that second gear on the light six now has a greater reduction.



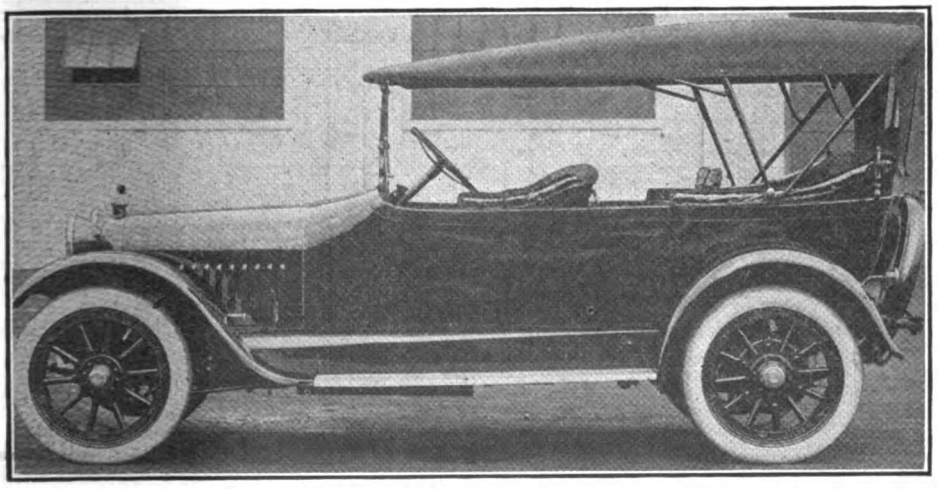
WINDOWS ARE FRAMELESS AND HAVE MECHANICAL OPENERS

On the light six another change has been made in fitting Timken bearings on the front axle. The axles on the master six have not been changed in general design but have been weighted up somewhat to follow the lesson learned on the racing track of making the unsprung weight sufficient to make the car hold the road, but no more. The speedometer drive on both cars is now the enclosed Empico.

On the master six the clutch and gearset housing is bolted to the rear end of the crankcase as a unit. The gearset provides four forward speeds. Both the clutch and gears can be reached through hand-holes with cover plates. On the light six a multiple-disk clutch is used also; the gearset provides three forward speeds.

The spring suspension remains as it was, the rear springs three-quarter elliptics. The improved method of suspension adopted on the larger six when it was introduced has been continued; instead of the usual spring hanger the springs are bolted directly to the rear of the frame members. The rear springs are underslung and the design has been worked out to permit maximum spring action without bumping. Vanadium steel is used in the main leaves.

The master six has a 132-inch wheelbase, while the light six has 126-inch. The wheels on the larger car carry 36 x 4½-inch tires while on the lighter car they carry 34 x 4-inch tires. Wide doors, with concealed hinges are a feature of the line of bodies on both. The enclosed cars are particularly luxurious and are equipped with such conveniences as sigar lighter, etc. The coupelet, which is a quickly convertable type, is continued. Tires are carried on the rear of the car in the touring designs and under the rear deck in the roadster.



CHALMERS LIGHT SIX TOURING CAR WITH EXTRA SEATS, PRICE $1,900

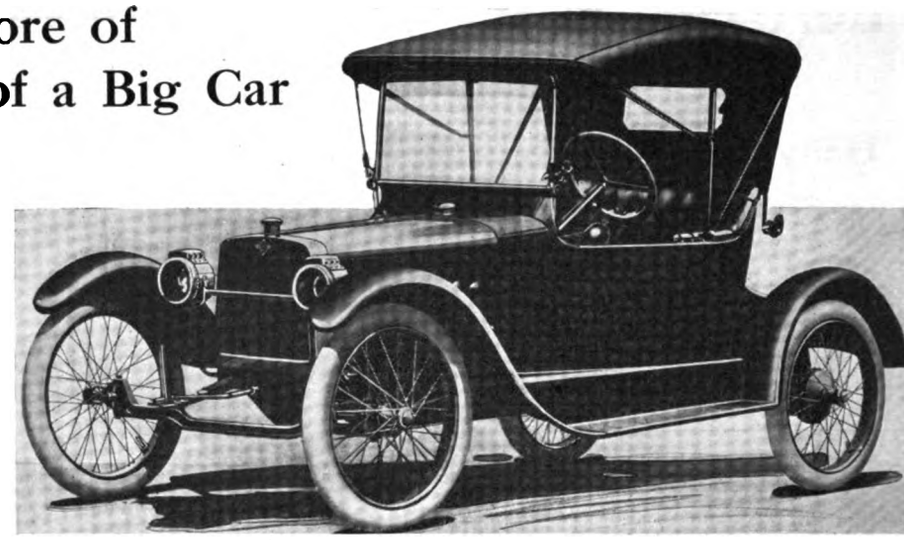
Potomac Gears Earns 92 Per Cent.

The Potomac Gears Co., Cumberland, Md., started in 1908, has shown a dividend of 92 per cent for the year just ended. The capital stock is $25,000, and the balance of business done during the past year was $160,000. The business is entirely cooperative, the stock being owned by thirty men, all employes.

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Saxon Takes on More of the Looks of a Big Car

Refines Its Body Lines But Holds to $395 Price—Rear Axle Improved in Details.



WITH A BIGGER AND BETTER BODY THE SAXON STILL SELLS FOR $395

In revising the Saxon car for 1915 its external appearance has been considerably changed for the better; the body is larger and more comfortable and is fitted with better upholstery. Full runningboards are used and the little machine has every appearance of a large car on a small scale. The Saxon Motor Co., Detroit, Mich., has held the price at $395 notwithstanding the much better body and the improvements that have been made in the mechanical details.

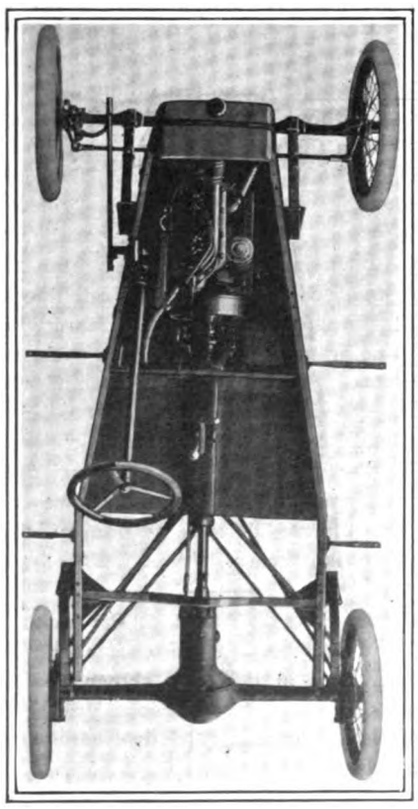
Full equipment is supplied with the car —top with cover and side curtains, one-piece windshield, two acetylene headlights with generator, oil tail lamp, horn and set of tools.

Practically no changes have been made in the motor, which is the L-head type with block-cast cylinders 2⅝ x 4. The S. A. E. rating is 11 horsepower. The crankshaft runs on two babbitt-lined bronze bearings; the camshaft, which has integral cams, is 1 inch in diameter and is operated by helical timing gears. The valves have steel stems and cast iron heads.

PRINCIPAL POINTS OF THE SAXON FOR 1915.

Price, roadster	$395
Color	Richelieu blue
Make of motor	Continental
Number of cylinders	Four
Shape	L-head
How cast	Block
Bore	2⅝
Stroke	4
S. A. E. rating	11
Ignition	Atwater-Kent
Carburetter	Mayer
Lighting system	Acetylene
Clutch	Dry plate
Gearset	2-speed
Wheelbase	96
Tread	56
Wheels	Wire
Tires	28 x 3
Steering	Left
Control	Center
Make of axles	Saxon
Type of rear axle	Semi-floating

Equipment: Top with cover and curtains, one-piece windshield, two gas headlights, acetylene generator, oil tail light, horn and set of tools.



REAR AXLE AND OTHER IMPROVEMENTS HAVE BEEN MADE IN CHASSIS

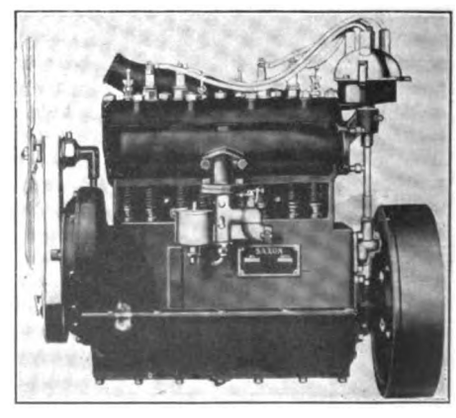
Lubrication is effected by a vacuum feed system which maintains a constant level. The Atwater-Kent ignition system takes current from a 6-cell dry battery. Cooling is by thermo-syphon with tubular radiator and fan. The Mayer carburetter has its air and gasolene adjustments on the dashboard and fuel is fed to it by gravity from a six-gallon tank under the cowl; the filler cap projects through the top of the cowl.

The propeller shaft runs in a steel torque tube and has a single universal joint; at the forward end of the torque tube is a forked yoke. The steering gear is of the bevel type with sector and pinion and has been greatly improved by the use of much better material than has heretofore been employed in its construction.

Two speeds are provided by the gearset, which is mounted as a unit with the rear axle. The main shaft of the gearset is mounted on Hyatt roller bearings and the other bearings are hardened steel on cast iron. Felt washers are inserted in the ends of the axle housing to prevent leakage of grease at this point; the differential is fitted with an oil filler which lubricates the bearings directly; and there is a through pin for locking the differential spider instead of a set screw, an improvement on the 1914 model.

The chassis frame has a marked taper from rear to front and is carried on springs of the cantilever type all around. The front axle is an I-beam forging and the front wheels run on ball-bearings. The service brakes are 8 inches in diameter and are lined with Thermoid, while the emergency brakes are steel on steel and are 7 11/16 inches in diameter; both brakes are 1¼ inches wide.

The wheelbase of the car is 96 inches and the tread is the usual standard, 56 inches. The wheels are of wire and are shod with clincher tires 28 x 3 inches.



THE COMPACT FOUR-CYLINDER MOTOR IS OF THE LONG STROKE TYPE

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There's a Time When It Pays to Be Yellow

Hang Out a Big Sign When the New Cars Come, Advises Reilly—It May Not Be Esthetic But It Helps.

By Ray W. Sherman

"Help! Help!" yelled Tommy Trumbull.

"Help? You young whipper-snapper! What's the matter with you?" demanded Reilly from his position in the salesroom door, where he stood with one hand upon the jamb.

For answer Tommy continued to stand stationary upon the sidewalk in front, one hand over his eyes and the other hand raised in an attitude of fearful defense against the big sign which blazoned and blared across the front of the building. It said:

—THE NEW SENNETT $1,450—

The sign was white and the letters were red. They were a couple of feet high and nobody got by the store without seeing them. It was a regular shriek by C. J. Reilly, Inc., that the new 1915 Sennett was in town and on the job to stay.

Tommy timidly skulked by the sign as if he were afraid it would bite him, and as he reached the door ducked in under Reilly's arm and into the salesroom. Reilly followed and went to his desk.

"Phew!" Tommy wiped his brow. There was nothing on it to wipe, but he indicated great relief at something.

"Gee!" he exclaimed. "That's an awful thing to spring on a fellow the first thing in the morning! Looks like a Hearst-Brisbane-New York World effort on the Russian war!"

"Don't like it, eh?"

"Do you want my honest opinion?"

"What does your opinion amount to?" demanded Charley, the other and older salesman, who walked in and shied his hat successfully at the coat tree.

"My opinion!" Tommy wanted to appear grieved.

"Let's have it, anyway," invited Reilly. "It won't do much harm."

"Nor good," added Charley.

"I don't like it." This was Tommy's opinion.

"Like what?" demanded Charley, who began rustling through a pile of papers and made the remark as if it were very much an insignificant and side affair.

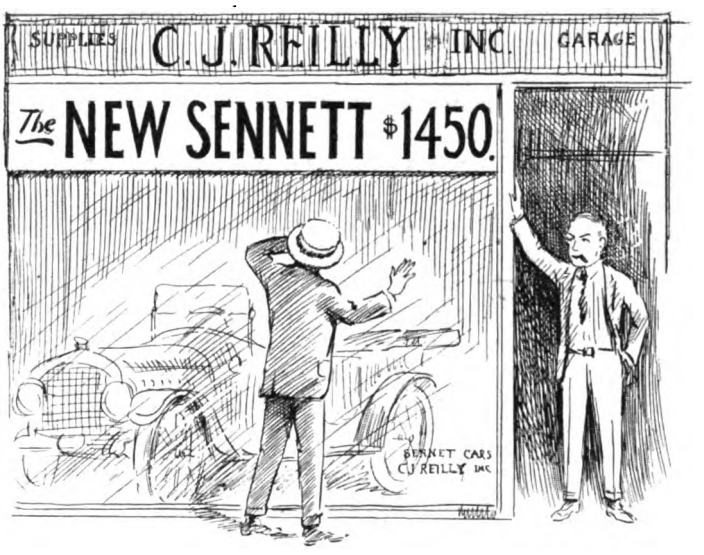
"The sign," said Tommy.

"What sign?" again demanded Charley.

"What sign! What sign!" Tommy exclaimed to Reilly. "See! It gave me a headache and he never even saw it." Then to Charley, "That sign on the front, you goop! Haven't you seen it?"

"Oh, that sign," answered Charley. "Sure I've seen it. I bossed the job when it was put up. I had it made."

"Now I know I don't like it."



—ONE HAND OVER HIS EYES AND THE OTHER RAISED IN FEARFUL DEFENSE AGAINST THE BIG SIGN ACROSS THE FRONT OF THE BUILDING

Tommy Fires the Last Shot.

Reilly smiled as his two assistants shot their compliments back and forth, and with Tommy's parting shot the skirmish seemed at an end. Reilly continued to smile dryly as Tommy indicated that he considered the matter ended and turned to begin his day's work.

"What's the matter with it? Why don't you like it?" Reilly asked, after several minutes of silence.

"I don't think it's good advertising. It's yellow. It's—it's—it's—why, it's not good taste. Looks cheap, tawdry, second-hand clothing store, circus poster, bargain sale. You know what I mean."

"I guess so," drawled Charley, never looking up from his work. It seemed to be one of the mornings when he was determined to bait Tommy—to get his goat, as it were.

Tommy's only answer to Charley was a look—but such a look.

"What if it is?" said Reilly. "Wouldn't you do it if you were a dealer?"

"I don't think so," replied Tommy after a few seconds of deliberation.

"And why?"

Takes Away Tone.

"Because. I think it takes tone away from your business. I don't think it envelops the establishment in the proper esthetic environment."

"That's fine! That's fine!" exclaimed Charley, looking up from his heap of cards and papers. "Envelops the establishment in the proper esthetic environment. That's good! That's fine!"

"Aw, shut up!" Tommy's goat was got, wherefore both Charley and Reilly laughed, to the discomfiture of the young man—who soon recaptured the animal and laughed, too.

"I know what you mean, Tommy," replied Reilly, "and I believe your idea is all right most of the time, but this is once when I don't believe it fits."

"Why?"

"Well——" began Reilly. "Well, I'll tell you. I'll ask you a question first. Supposing the newsboy who peddles papers on your street should come along every night yelling at the top of his voice, what would you do?"

"Go out and tell him to shut up, probably."

"All right. And now, supposing he

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came along every night in the year but one and didn't do so much yelling, and then came along on one particular night and shrieked at the top of his voice, what would you do?"

"Rush out to get the paper, probably."

"And if he had reason for yelling on the night in question, if there was news to justify it, would you think any the less of him as a newsboy?"

"No, probably not. I probably would think he was a pretty good newsboy."

"Then," continued Reilly, "what's the difference between that newsboy and me?"

"Difference? What do you mean?"

"This," said Reilly. "All through the year we do good, conservative advertising, don't we? I think you'll concede that."

"Yes."

"And at this time of year we have something to shout about, haven't we?"

"I should say we had!" exclaimed Tommy. "The new car's a hummer!"

"Then why not shout about it?"

"Well—" Tommy shrugged his shoulders. "Maybe it's all right. Of course—perhaps—you know—I just didn't like it when I saw that sign the first thing in the morning."

"I don't believe in this style of advertising as a steady diet any more than you do," continued Reilly. "But for the purpose to which we have put it I think it's good. Here we trot along all through the year with newspaper advertising on a proper scale; we follow-up our prospects with letters, literature and personal work and make a good, continued and consistent effort throughout the year in an attempt to get rid of our new cars. We don't yell our heads off and we don't make exaggerated claims. We are always prepared to back up every thing we say. We try to make the people believe in us and rely on our word.

"We never slap a big red sign on the window or do any of these bargain-sale second-hand-clothing stunts you spoke about—except once a year. If we had a sign like that in the window all the time it might make a sensation the first day, but after it had been up a while it would attract no attention and people would scarcely give it a look as they passed by. It would be like the boy who cried 'Wolf! Wolf!' when there was no wolf. Then when the wolf came and he wanted help no one paid any attention to him."

"But now there is a wolf," laughed Tommy.

"And now there is a wolf, a real bristly wolf," smiled Reilly. "His name is 1915 Sennett and he's one of the most startling things that ever got loose around these diggin's. We believe he is something to shout about—and because we have never shouted when there was no wolf the people take stock in what we say. They believe we have something new and attractive in the car line or we wouldn't make so much noise about it."

"They undoubtedly do believe it," remarked Tommy, as a man, passing in the street, looked at the sign, then at the car in the window, and started to enter. Charley went out to meet him.

"I appreciate your sentiment about this sign advertising being yellow," continued Reilly, "but it is legitimate and perfectly respectable. This is the one big period of the dealer's year. When the new cars come in is the one big time when he has something on which to concentrate the interest of the public.

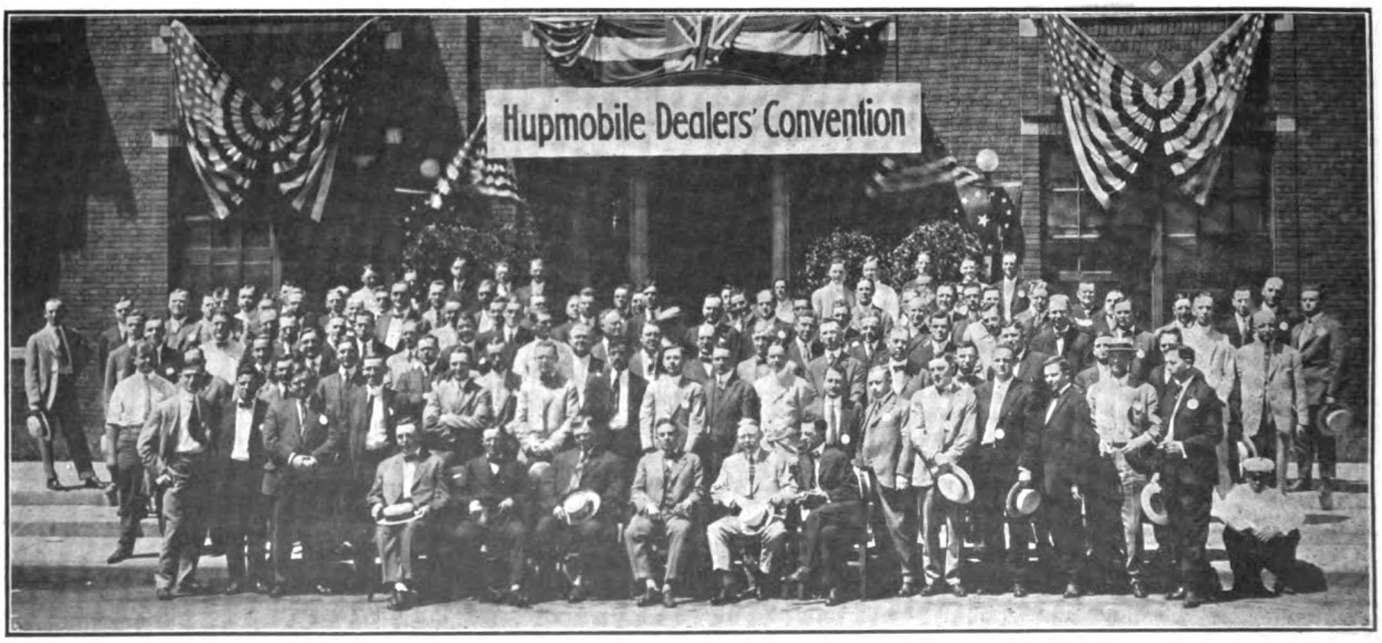
"All through the year we advertise conservatively, whereas some people—some used car men, for instance—plaster their fronts with signs the year around. They become like yellow newspapers, which are always one day ahead of actual events. When they do tell the truth everybody discounts it

"At this time we are justified in hanging out a big sign. Even if it doesn't mean all it should to people who see it it tells them that we consider the arrival of the 1915 Sennett a big thing to us, and if we stand well with them the fact that we are making a lot out of it is bound carry weight with them.

"Also, in our newspaper advertising we are going to use a little extra space and slam out a little about the coming of the new cars; we are going to mail invitation cards to our prospects and do everything on a little larger scale than we do at other times. We want to make a big thing of this and——"

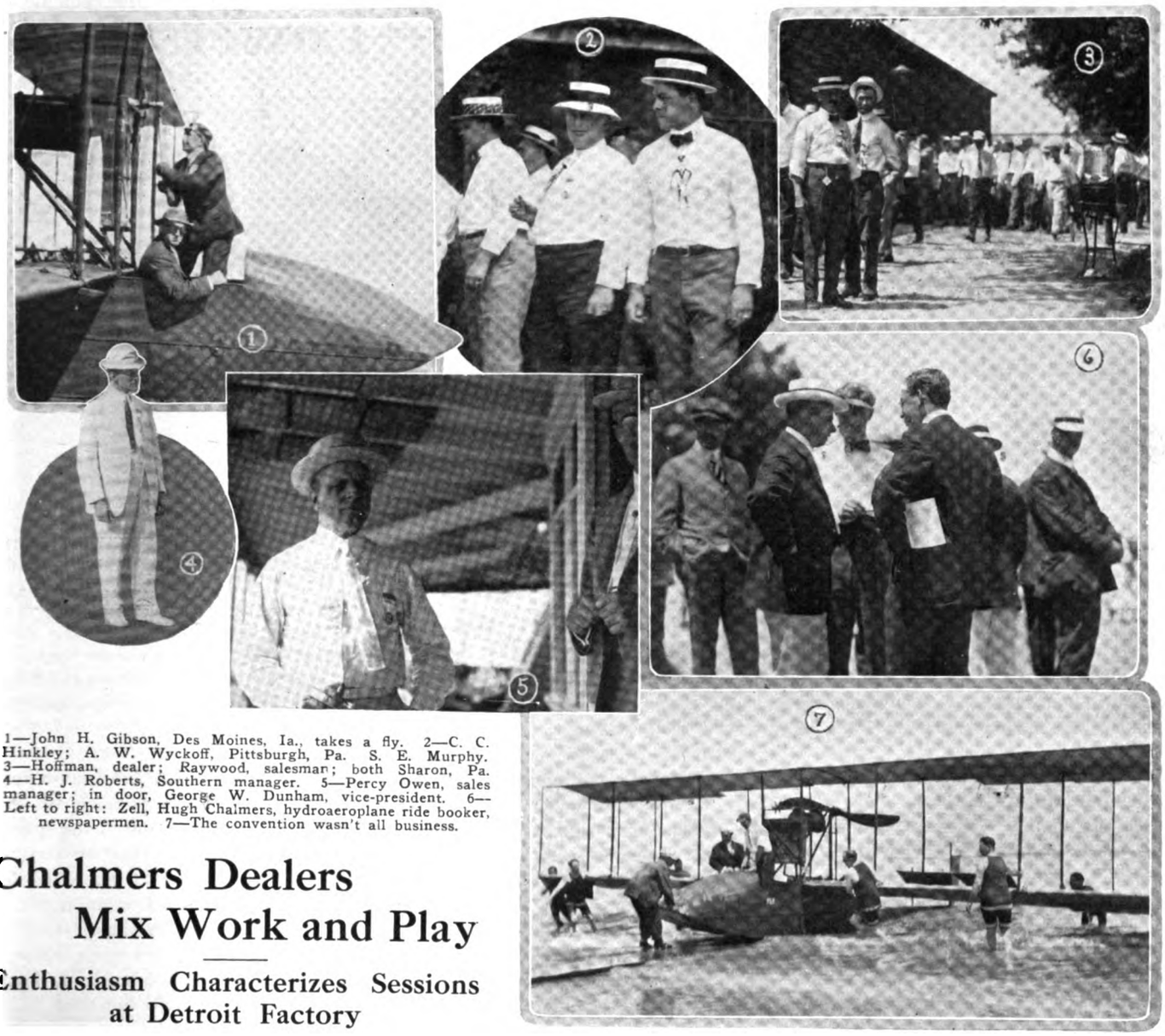
"Wolf! Wolf!" said Tommy, as another customer walked in the door, and Tommy hurried out to meet him.

200 Hupmobile Dealers Convened at Factory Last Week



The three-day dealers' convention of the Hupp Motor Car Co., Detroit, closed Friday night, July 31, when the 200 dealers and officials of the company inaugurated the 1915 Hupmobile business year with a banquet at the Hotel Pontchartrain. The company is looking forward to a big year. Everything points to it, says President J. Walter Drake. Seated in front row are President J. Walter Drake, Sales and Advertising Manager Frank J. Mooney, Commercial Manager F. A. Harris and Manufacturing Manager S. H. Humphrey.

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1—John H. Gibson, Des Moines, Ia., takes a fly. 2—C. C. Hinkley; A. W. Wyckoff, Pittsburgh, Pa. S. E. Murphy. 3—Hoffman, dealer; Raywood, salesman; both Sharon, Pa. 4—H. J. Roberts, Southern manager. 5—Percy Owen, sales manager; in door, George W. Dunham, vice-president. 6—Left to right: Zell, Hugh Chalmers, hydroaeroplane ride booker, newspapermen. 7—The convention wasn't all business.

Chalmers Dealers Mix Work and Play

Enthusiasm Characterizes Sessions at Detroit Factory

Between 400 and 500 dealers, assembled in convention at the factory of the Chalmers Motor Co., Detroit, Mich., enthusiastically endorsed the Chalmers Dealers Service Policy which goes into effect this season; by this policy any Chalmers owner will be able to secure service from any Chalmers dealer in any part of the country, regardless of where the owner bought the car.

For instance, if a man buys a Chalmers in New York city and requires service in Des Moines, Ia., he will be able to get the service from the dealer in the latter city. The new policy contains the following three clauses, in effect among all Chalmers dealers:

"First—It is our intention to give each and every purchaser of a Chalmers car fair and businesslike treatment. Should any customer not receive such treatment we ask in good faith to be advised.

"Second—We will make all necessary repairs and adjustments, without charge, for one month after delivery of car, provided car has not been tampered with or injured through accident.

"Third—We will install, without charge for labor, any parts that may be replaced as defective by the Chalmers Motor Co. or ourselves, for a period of 90 days after date of delivery of car; after such date all work will be done in a careful and workmanlike manner and our regular charge made for same."

Another important decision by the majority of the dealers was that hereafter second-hand Chalmers cars will be sold by the dealers with a guarantee just as new cars. In most cases used cars will be handled entirely separate, just as if it were a different business.

Important among the various actions taken at the convention was the unanimous approval of the raise in price of the 1915 Chalmers cars, Model 26B, the "Light Six," to cost $50 more, or $1,850, and Model 29, the "Master Six," to cost $125 more than the 1914 models, or $2,400. Most of the other manufacturers who have announced 1915 models have made a reduction in their prices.

Many of the officials and dealers at the convention made informal speeches touching upon a variety of subjects. Some of the subjects were: "The Automobile Business in General," Hugh Chalmers, president; "Salesmanship and Advertising Principles," Lee Owell, assistant general manager; "Manufacturing Methods," H. H. Pinney, works manager; "Service and Engineering Principles," George W. Dunham, consulting engineer; "Advertising," Lee Anderson, advertising manager; "Selling Cars and Salesmanship," Lee Counselman, general manager.

A hydroaeroplane was one of the amusement features of the convention. Dealers and factory men were taken out for trips and the man who booked rides was kept busy.

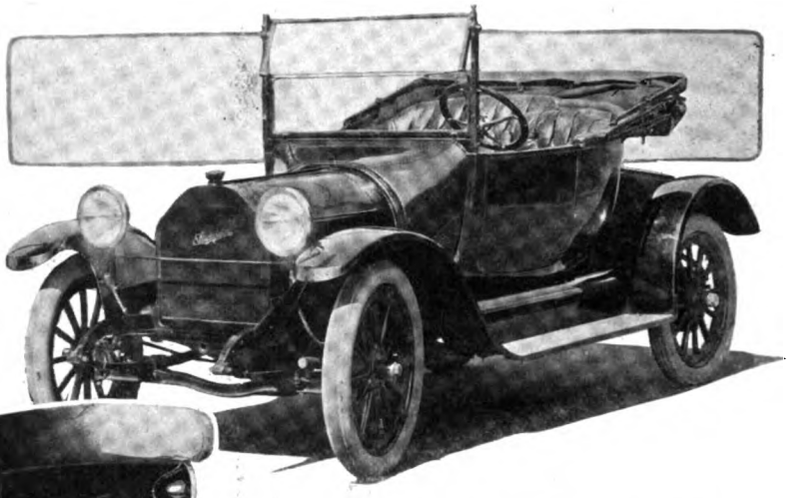
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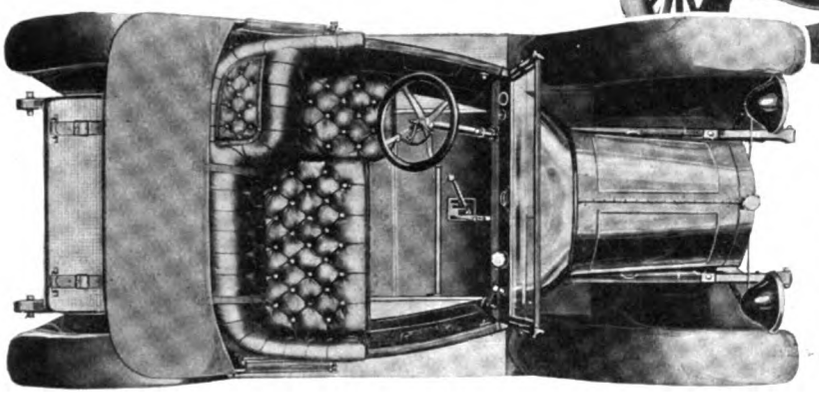
Studebaker Refines Details—Lowers Price

Four is Dropped $65—Is Now Listed at $985.

Six is Reduced by $190—Now Sells at $1,385.

Power Increased 15%—Parts Are Lightened.





THE DRIVER'S SEAT IN THE STUDEBAKER ROADSTER HAS BEEN CARRIED A FEW INCHES FORWARD FROM THE SEAT FOR THE OTHER PASSENGERS—THIS PERMITS THE DRIVER GREATER FREEDOM OF ARMS AND GREAT COMFORT AND CONVENIENCE FOR THOSE WHO RIDE BESIDE HIM—THE BODY IS ROOMY YET AVOIDS ALL THE APPEARANCE OF BULK AND CLUMSINESS—IT SELLS FOR $985.

Substantial price reductions and numerous refinements in both body and chassis mark the 1915 cars manufactured by the Studebaker Corporation of America, Detroit, Mich. No radical changes have been made, however, and the line consists of two chassis, as in 1914. The price of the four-cylinder car has been reduced $65 and is now $985, while the six has been reduced $190 and is now $1,385 with the five-passenger body and $1,450 with the seven-passenger body.

The equipment included in the regular outfit of the cars is complete, including a one-man top, with side curtains and cover, Wagner electric lighting and starting system, headlight dimmers, Stewart-Warner speedometer, gasolene gauge, electric horn under the hood, an extra demountable rim, jack, pump and tools.

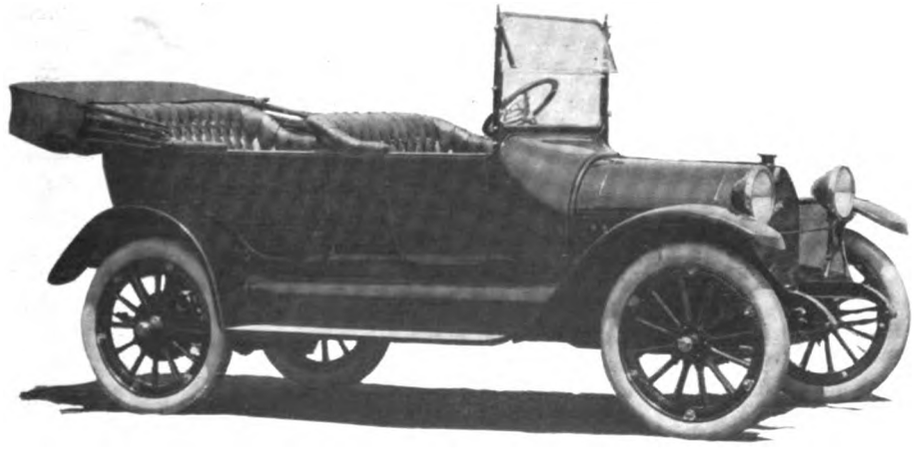
While there has been no increase in the engine dimensions it is stated that the power has been increased some 15 per cent. This has been brought about by reducing the weights of the reciprocating parts and by improving the design of the manifolds.

All pistons have been lightened four ounces each, part of this weight elimination being accounted for by the use of two rings instead of the original three. Valve sizes are unchanged but the areas of the gas passages have been increased. A number of detail improvements have been made in the splash lubrication system, including the redesigning of the connecting rod scoops and of the splash troughs. The Schebler carburetter is still used, but it has been improved by the addition of a hot water jacket and a heating arrangement for the air supply.

In both motors the cylinders are cast in a single block with L-heads; in both cases the bore and stroke are alike 3½ x 5. Valves are on the left side with the stems and springs enclosed in the usual way, the cover plates being held in place by thumb nuts. The drive to the water pump and ignition distributor by cross shaft is continued, the pump being at one end of the shaft and the distributor at the other. The crankshaft of the four-cylinder is carried on three bearings and that of the sixcylinder on four bearings; the bearings are lined with babbitt.

In the case of the six, the water is cooled by a honeycomb radiator, while in the case of the four the radiator is of the vertical tube type with an auxiliary tank. In the case of the smaller engine the cooling problem has been greatly simplified by the substantial increase that has been made in the size of the exhaust pipe and passages, permiting the free exit of hot gases.

Starting, lighting and ignition functions still are controlled by a two unit Wagner-Studebaker system. The over-



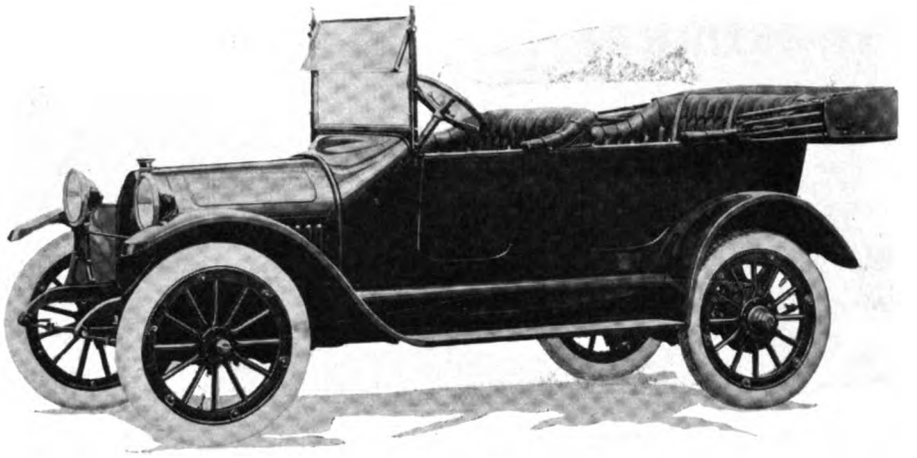
STUDEBAKER FIVE-PASSENGER BODY ON SIX-CYLINDER CHASSIS

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DETAILS OF STUDEBAKER LINE FOR NEW SEASON

	Four	Six
Model		
Price—		
Touring	$985	$1,385
Roadster	985	....
Color	Blue	Blue
Make of motor	Studebaker	Studebaker
Number of cylinders	4	6
Shape	L-head	L-head
How cast	Block	Block
Bore	3½	3½
Stroke	5	5
S. A. E. rating	19.6	29.4
Ignition	Wagner	Wagner
Carburetter	Schebler	Schebler
Starting & lighting	Wagner	Wagner
Clutch	Cone	Cone
Gearset	3-speed	3-speed
Wheelbase	108	122
Wheels	Wood	Wood
Tires	33 x 4	34 x 4
Steering	Left	Left
Control	Center	Center
Type of rear axle	Floating	Floating

Equipment: One-man top with cover and side curtains, rain-vision ventilating windshield, electric horn, speedometer, gasolene gauge, extra demountable rim, and full set of tools.



STUDEBAKER FOUR WITH STANDARD FIVE-PASSENGER BODY

all length of the starting motor has been reduced an inch and it has been mounted closer to the motor, saving considerable space and increasing efficiency. The starting motor drives to the engine crankshaft through a roller chain and pinion, the total reduction being 20 to 1. The lightening of the reciprocating parts of the engine and the reduction of internal friction permits a higher cranking speed than in the 1914 model.

When the starting motor is switched in by means of the usual pedal it drives through a roller clutch, which is placed on the crankshaft so that when the engine takes up the drive and the starting motor is cut out the chain and sprockets are all at rest. This arrangement not only minimizes noise but saves a considerable amount of wear and tear.

The generator is driven from a gear on the crankshaft at one and a half times crankshaft speed, starts to charge the battery at a speed of 10 miles an hour and reaches its maximum capacity at 20 miles an hour.

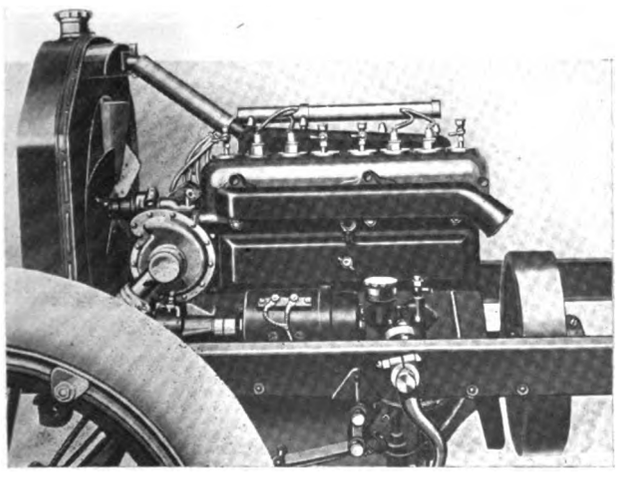
No change has been made in the clutch itself, which is a leather-faced cone, but the leverage on the operating mechanism has been increased in the case of the six; in both cases flat springs are placed under the clutch leathers and a single main spring is employed. Cones are of pressed steel.

Both cars have three-speed selective gearsets controlled by centrally located levers. The main drive pinion is mounted on Timken roller bearings, which are adjustable. The gearset is mounted as a unit with the rear axle, as in 1914. The rear axle itself is not greatly changed, though grease leakage from the differential housing to the brakes has been eliminated. The brake drums have been increased in diameter and both brakes now are lined with an asbestos fabric; on the previous model the contact was metal to metal. Both brakes are fitted with equalizers.

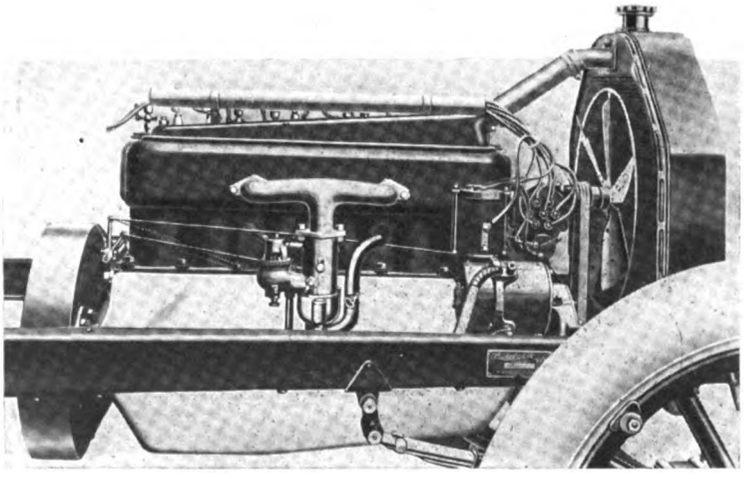
Timken tapered roller bearings are used in the front axle of both cars; the axle is a forging of the usual I-beam section. The steering gear is irreversible and is mounted on ball bearings and is controlled by a 17-inch wheel on the left side of the car. The only change that has been made in the spring suspension system is detail improvements in construction and material and closer confirmation to the load carried. Scroll elliptic underslung springs are used in the four and three-quarter elliptics in the six.

All wheels are of wood; on the four the tires are 33 x 4, an oversize for the 32 x 3½ tires used in 1914, and on the six they are 34 x 4, the same size being used front and rear.

The six carries two bodies, a five- and seven-passenger touring, while the four is built as a touring car and a three-passenger roadster. The roadster is carried forward a few inches, which adds considerably to the comfort of the arrangement. Everything that can be done to eliminate noise has been done, including the insertion of a strip of squeak-preventing fabric between the body and the frame. The wheelbase of the four is 108 and of the six 122.



MOTOR OF FOUR—EXHAUST PASSAGES ARE MADE LARGER—VERTICAL TUBE RADIATOR



INTAKE SIDE OF SIX—HONEYCOMB RADIATOR IS USED—STARTING MOTOR IN BOTH AN INCH SHORTER

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1915 OAKLAND FOUR, ON LEFT, HAS HIGH-SPEED MOTOR AND MANY DETAIL IMPROVEMENTS. SIX, ON RIGHT, ONLY SLIGHTLY CHANGED BUT PRICE CUT $100

But Two Chassis in 1915 Oakland

Six Almost Unchanged But Costs $100 Less; Small Four Improved and Price the Same Larger Four Dropped

OUTLINE DESCRIPTIONS OF OAKLAND FOUR AND SIX FOR 1915

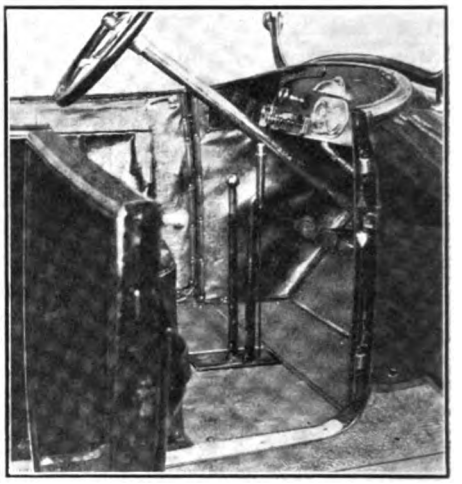
Model	Four	Six
Price—		
Touring	$1,200	$1,685
Roadster	1,200	1,685
Color	Blue and gray	Blue and gray
Make of motor	Northway	Northway
Number of cylinders	4	6
Shape	L-head	L-head
How cast	Block	Block
Bore	3½	3½
Stroke	5	5
S. A. E. rating	19.6	29.4
Ignition	Delco	Delco
Carburetter	Marvel	Marvel
Starting-lighting	Delco	Delco
Clutch	Cone	Cone
Gearset	3-speed	3-speed
Wheelbase	112	123½
Wheels	Wood	Wood
Tires	33 x 4	35 x 4½
Steering	Left	Left
Control	Center	Center
Make of axles	Weston-Mott	Weston-Mott
Type of rear axle	Floating	Floating

Equipment: Top with cover and side curtains, windshield, robe and foot rails, jack, pump and set of tools.

In preparing for the 1915 season, the Oakland Motor Car Co., Pontiac, Mich., has cut its line down to two chassis models, a four and a six, discontinuing a larger four, and while maintaining the price of the four at $1,200, has cut $100 off the price of the six, making it $1,685.

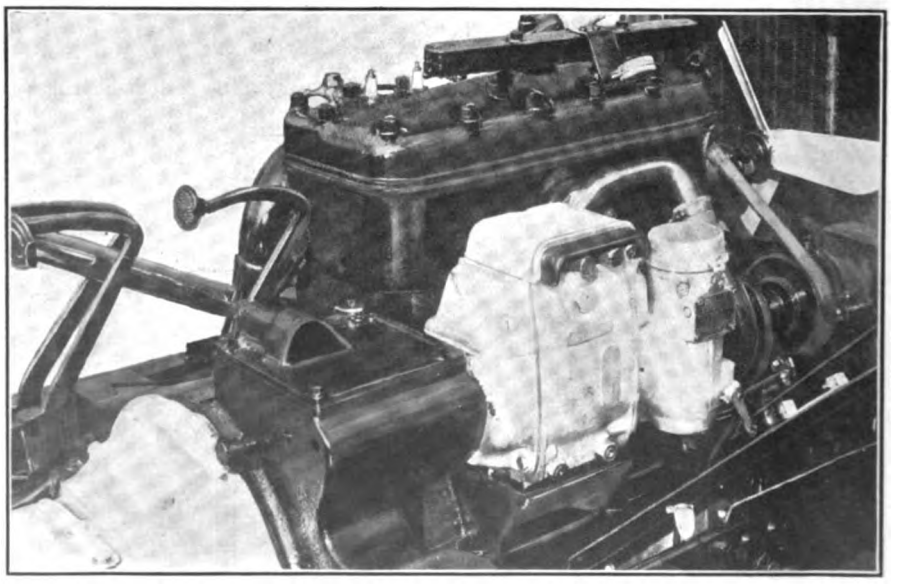
The smaller car is a much-altered continuation of last season's small four, while the six, though improved in many details, shows less alteration. Both machines are sold with full equipment, including Delco electric lighting and starting system, top with cover and curtains, rain-vision ventilating windshield, electric horn, tools, jack and pump.

What amounts to a complete redesigning has brought about considerable improvement not only in the appearance but also in the performance of the smaller model. The four-cylinder block motor retains its cylinder dimensions of 3½ x 5 and its S. A. E. rating of 19.6, but general refinement has resulted in a marked increase of speed and power, so that the engine now belongs in the high-speed class, running up to 2,500 or 2,600 revolutions per minute. Chief among the improvements are the material lightening of the reciprocating parts, the increasing of the valve diameters and the redesigning and freeing of the gas passages. Much is claimed in the way of good gas distribution for the swinging of the throttle on a vertical axis instead of the usual horizontal axis.



PLENTY OF ROOM ON THE FOOTBOARDS

Three bearings still carry the crankshaft. The pistons have been crowned to increase strength but not weight, and are fitted with thin, rolled steel rings, three to a groove. There are three grooves, making a total of 9 rings. The L-head cylinders have a detachable one-piece head, and the valves, of a tung-



FOUR-CYLINDER MOTOR HAS DELCO STARTING-LIGHTING-IGNITION SYSTEM ON RIGHT SIDE

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sten alloy, are completely enclosed in the usual way. The timing gears are spirally cut.

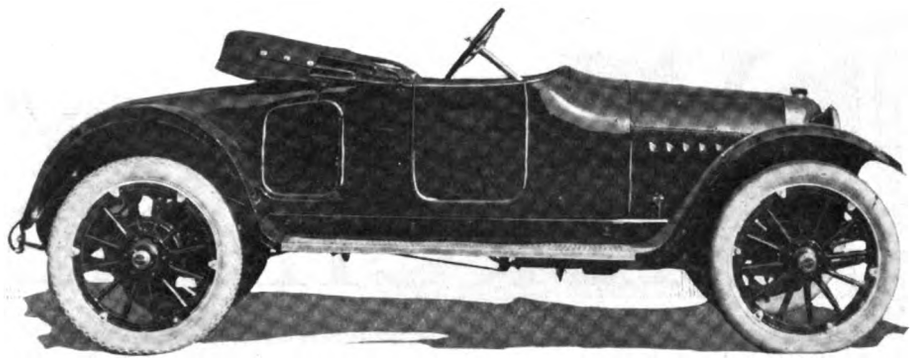
The centrifugal pump which circulates the water is located in front of the Delco unit on the right side. The radiator, of the finned tube type, has been given a 20 per cent increase in capacity.

The vacuum gasolene feed system is used to carry fuel from the low-down rearward gasolene tank to the carburetter, instead of last season's pressure system.

The Delco combination starting-lighting unit is on the right side of the motor, driven from the front gears when operating as a generator and driving through a flywheel-rim gear when starting the engine. The Delco ignition system also is fitted with automatic spark advance under control of the hand control on the steering wheel. Side lights are not used, a dimming attachment for the headlights making them unnecessary. When the ignition circuit is locked in the off position the electric horn also is locked against tampering fingers.

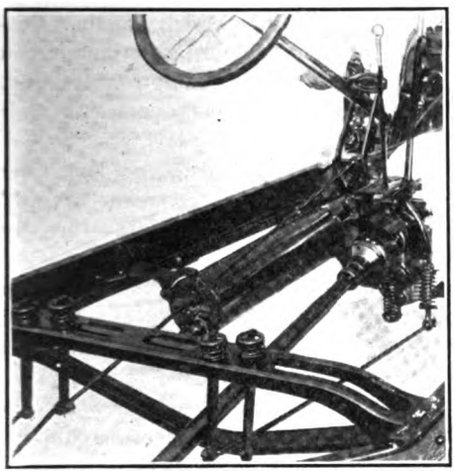
The three-speed gearbox is bolted to the flywheel housing, making a unit power plant. All bearings in the gear-shifting and brake levers have been eliminated by the use of wedge-and-spring devices which automatically take up wear.

Steel tubing is used for the propeller shaft, the outside diameter being 1½ inch and the wall thickness ⅛ inch; the universal joint stubs are electrically welded into the ends. This shaft is much stiffer and lighter than the solid shaft formerly employed. The axle is full floating and is equipped with Hyatt roller and New Departure bearings; the wheels are on Hyatt roller bearings. The frame has been redesigned and follows the body line throughout; the springs are carried directly under the side rails. The wheelbase is 112 inches, as before; tires are 33 x 4 on demountable rims.



THE FOUR HAS BEEN MUCH IMPROVED BY CHANGES THAT AMOUNT PRACTICALLY TO REDESIGNING

The motor of the six has been refined in the same way as that of the four and has the same bore and stroke, 3½ x 5, and the S. A. E. rating is 29.4; the cylinders are block cast, with detachable heads, and the valves are all on one side. The crankshaft has four bearings. Generally speaking, the motor is much like that of the four. The wood wheels are shod with 35 x 4½ tires on demountable rims.



WEDGE-AND-ROCKER BRAKE ROD BEARINGS

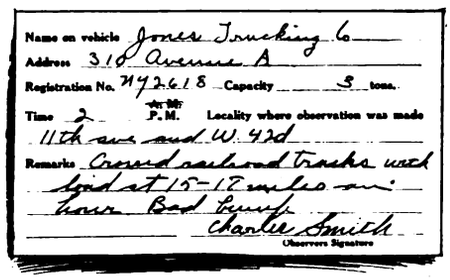
TELLS OWNERS HOW TRUCKS ARE DRIVEN

New York Club Reports Mishandling of Vehicles—Uses a Card.

To promote greater efficiency in motor trucks generally, the Motor Truck Club of America, New York city, has inaugurated a system whereby owners of trucks, regardless of whether the owners are club members, are kept informed of how their trucks are being operated.

If a club member sees a truck being improperly operated he fills out a postal card blank and mails it to the club secretary.

The secretary of the truck club files this card report and notifies the truck owner of the improper operation, leaving it to the owner to take any further steps.


Name on vehicle Jones Trucking Co
Address 310 Avenue A
Registration No. M72618 Capacity 5 tons.
Time 2 A.M. P.M. Locality where observation was made
11th ave and W. 42d
Remarks Crowd railroad tracks used
speed at 15-17 miles an hour Bad bump
Charlie Smith
Observers Signature

SAMPLE REPORT ON DRIVER

ILLINOIS DEALER BELIEVES IN USING HIS WINDOWS



THE DANVILLE AUTO SUPPLY CO. STATES THAT IT HAS FOUND MANY VALUABLE WINDOW-TRIMMING IDEAS IN MOTOR WORLD—A SAMPLE DISPLAY

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WIDE-AWAKE MERCHANDISING

"CHEAP" CUSTOMER'S MONEY IS GOOD—WHY NOT TAKE IT?

Elevating the Nose When He Says He Has Only $450 to Spend for a Used Car Makes That Nose Cost You $450—An Example of Wrong Kind of Method.

The sign in the window said "Used Cars—$350, $450, up to $1,000—Come in and look them over."

It was a decidedly nice show window and an equally nice sign. The spirit was friendly and the line of cars this concern regularly sold was high-class, very high-class, with the accent on the very.

Still, there was the sign reading, "$350 and up." The prospective buyer thought that surely here he would strike something unusual. This concern dealt with the highest-class trade and naturally the high-class trade would bring high-class used cars to trade in for their new ones. He decided to go inside and look at the used cars.

Four hundred and fifty dollars was the limit that he could pay just then.

Four men were sitting around the salesroom. One was at a table reading. He did not look up. But a young Greek god, with fine features, good mouth, clear skin, large straight nose, white teeth and a mass of fair curly hair approached him swiftly.

It was plainly his turn to make the sale and he wasn't going to miss it.

"I want to look at a car," began the customer.

"Step right over here," said the fair-haired one, as he led him toward a $3,000 style of carriage.

"Wait a minute. I don't want anything as expensive as that. I want to look at those used cars for about $450," said the would-be buyer.

"Oh!" uttered the Greek god.

It was only the simple word of two letters, but it contained a wealth of disappointment. It said plainly, "Why, the idea of coming in here to buy a car at that price—don't you know who we are? We sell the rich people of the town, the very exclusive classes. You can hardly expect to arouse our interest with a request to look at used cars for about $450."

The customer felt ashamed—almost.

"Yes, there's no use showing me anything above $450," continued the customer briskly. "Your window card says you have cars of that price—and I would be obliged if you would show them to me."

The salesman opened a door in the back of the salesroom which led into the garage.

"Come," said he.

The customer came.

He followed the salesman over toward the back. There were three cars covered with dust.

"There," said the salesman.

The customer hoped that the salesman would relent now that he had him out there by himself. But his mouth was stern. The single word "There" was all that would come spontaneously.

He thought he would try again. Perhaps this fine-looking superior person could be lured into friendly conversation.

He looked at the dusty cars with their soft tires and remarked:

"You must have had these a long time—have you any of more recent vitage?" It was said with a smile that usually broke down reserve.

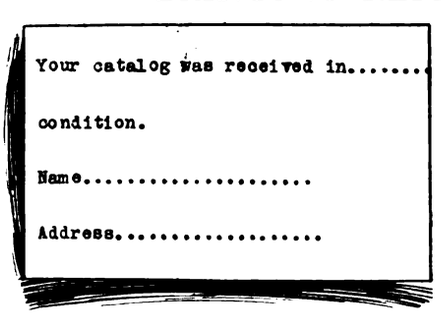
The Greek god, whose features were growing more marble every minute over this used car sale, said nothing, but walked away and presently came back.

"Here," he said, beckoning with his index finger. The customer "hered" and looked at a better specimen.

"Four hundred and fifty dollars; take it or leave it," said the salesman. The customer left it, of course.

And ever since he has never had a good word to say for that store or its cars.

HERE IS A CATALOG RETURN CARD THAT BRINGS 75 REPLIES FROM 100 MAILINGS



One of the most effective plans for getting a reply from the prospect to whom a catalog has been sent is employed by the Simplex Automobile Co., 240 West 59th street, New York city. The average of replies is estimated at 75 per cent.

The scheme was the result of the loss of catalogs in the mails; many times a prospect who had asked for a catalog would write a second time, stating that he had not received it, and inasmuch as these little books cost about 30 cents each the card was worked out as a measure of protection to the company. The card itself is an ordinary postal card which is typed with the return address and the back typed to be filled in as illustrated. The card has the added value of drawing a reply from the prospect, a not negligible feature.

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SIMPLE TRIM BEST WINDOW

The Less in It the Better It Will Be.

Who ever thought that Dr. Johnson—the great Samuel Johnson immortalized by Boswell—would ever be quoted as an advocate for change and variety in window displays? Yet it appears that Johnson in one of his works wrote:

"The great source of pleasure is variety. Uniformity must tire at last even though it be uniformity of excellence. We love to expect; and when expectation is disappointed or gratified we want to be again expecting."

Is not the attitude of human nature today even as it was then? We say more or less flippantly that "variety is the spice of life," but we sometimes forget that knowledge of this fundamental fact may be made a cashable asset!

Your show windows offer one continuous opportunity for variety, change and attractiveness. What are you doing to secure this variety? What are you doing to introduce the element of the unexpected or the unusual? Think it over and **DO** something about it. Then send a photograph of your effort to Motor World and let us know how it worked.

So many dealers think window dressing is an art, and they should have an artist to plan, and as they have and can get no artist they do nothing about it.

Window Trimming Not Impossibility.

Window dressing is an art. But it is an art that can be studied and cultivated. Back of all window displays are simple, clean-cut merchandising ideas. First understand your materials and your stock of them and then plan.

As has been said and written many times, simplicity is the keynote of a good window display. And a good window display is like a good picture—it does not attempt to illustrate a dozen things, but some central object is always the point of attraction and all else is subordinated to it.

Imagine you are an artist building a picture. The first thing is to have in your mind what the picture is going to be about. Then after the placing of the main features comes the consideration of the background. Watch the best department store in town for ideas.

See how druggists of the progressive type frame their displays. Keep your eye on the hardwareman, for he has come forward at a tremendous pace and appreciates the value of window displays well done. You will note always that simplicity, orderliness of arrangement and clean windows inside and out are inherent characteristics.

If You Want Anything Ask for It.

There are more touchdowns to be made by straight football than by tricks. If you want something, ask for it and you will be likely to get it. Lots of people want things badly, but are so bashful about asking that by the time their idea has passed the opportunity has gone.

The diffident solicitor who engages in conversation about the weather and remarks he saw you at church last Sunday and then sits back as if he expected you to begin the real conversation hasn't got a chance. He kills his own game before he begins. He could have stayed away and had more chance left. He hems and haws and acts verily as if he were ashamed of the business he was in and was hoping something would happen so that he wouldn't have to mention it.

Quite frequently something does happen. The man who is being called upon grows impatient finally and says. "Well, what can I do for you?" And then the secret has to come out. Some people consider this clever salesmanship—but rarely does the customer think so. He is apt to wonder why the "darn fool" came to see him.

HOW IS YOUR "PEP" SUPPLY?

Is It Holding Out?—Better Look It Over.

You can't get business by staying in and wishing for it. You must get out and hustle.

"They don't move fast enough for me," said a big business man in speaking of his salesmen. And there is a lot in that. One must move fast these days in order to keep ahead. The fellow who waits and procrastinates is sure to find the order gone when he gets there.

Not only do employers love a man who has lots of "pep" and the do-it-quick spirit, but prospective customers like it, too. Men like to feel that the salesman is eager after their business. And the sight of such a man in action often creates sufficient enthusiasm so that he gets the order when a salesman of the slow-moving type would not get it at all—even with the same goods.

Stir up the "pep!" Get out your enthusiasm! Look it over and see if it is false and threadbare or genuine and closely woven all through. It must be the real goods to stand the strain of business nowadays. If you haven't got the right stuff or are the least bit doubtful hurry back to the source and get a fresh supply.

"BIG ACCIDENT! HAD NO HORN!" SAYS WINDOW DISPLAY

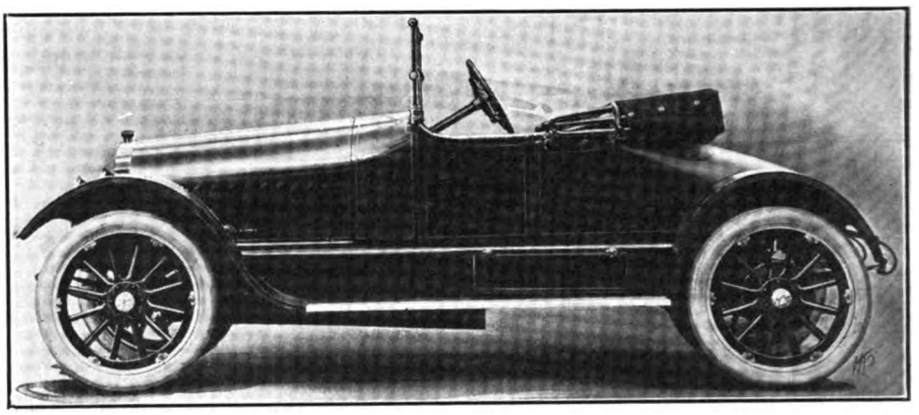


FISK COMPANY, DALLAS, TEX., REPRODUCED A BAD CURVE IN A COUNTRY ROAD WITH A CAR AND CARRIAGE WRECKED—THE MAN WHO "HAD A KLAXON" CAME THROUGH ALL RIGHT AND IS DISAPPEARING AT THE RIGHT—THE PUP ADDS A CLEVER TOUCH

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Herff-Brooks Tapers Hoods

New Designs Mark Latest Product—Prices the Same.



SLOPING HOOD ADDS GRACEFULNESS TO LINES—6-50 ROADSTER

There have been few changes in the construction of the Herff-Brooks cars, built by the Herff-Brooks Corporation, Indianapolis, Ind., since they were announced in April and no changes have been made in the prices. The four-cylinder model sells for $1,100 and the six for $1,375, in each case with five-passenger touring body and equipped with Aplco electric lighting and starting system.

Regular equipment includes one-man top with cover and side curtains, two part windshield, headlight dimmer, electric horn, ammeter, concealed tool boxes, speedometer, one extra demountable rim, tire irons, and the usual jack, pump, tools and robe and foot rails.

The most noticeable outward change is in the body design at the forward end. In the new models the top line of the hood merges into the cowl line without an angle and the hood itself has a rather marked taper. Mechanically there are no changes of importance, with the exception of an increase in the bore of the four-cylinder motor from 4⅛ inches to 4¼, the stroke remaining at 5 inches. The same bore and stroke are found in the six.

As in the previous models the cars are much alike in design and construction, and with the exception of a few details and dimensions one description answers for both.

The motors are of the L-head type and are unusual in that the cylinders are cast individually. This construction permits the use of five bearings in the four and seven in the six. The crankshaft is cut from a solid billet of steel. Lubrication is effected by a combined splash and circulating system, the oil pump being of the gear type. A sight feed on the dash serves as an index for the information of the driver.

Ignition is by Bosch D U high-tension magneto mounted on the left side of the engine and driven through a universal joint. The water pump is driven from the front end of the crankshaft, also through a universal joint, and both pump and magneto are accessible and readily detached.

The gearset is mounted separately from the engine and is hung from cross members of the frame. Between the clutch and gearset there is a universal joint to compensate for slight errors of alignment. The clutch is an inverted cone having a leather facing backed by steel springs. The gearset provides the usual three speeds, selectively controlled, and both clutch and garset are mounted on ball-bearings.

Drive to the rear axle is through an enclosed propeller shaft, the housing being bolted directly to the differential case; torque is taken up by a yoke. The front end of the propeller shaft has a squared end which fits into the rear member of the universal joint.

Semi-floating construction is employed in the rear axle, which is equipped with ball-bearings throughout. The differential gear has four pinions; the spider is a drop forging and all the parts are of substantial design.

Both emergency and service brakes are internal expanding and operate on 14-inch drums, each band being 2 inches wide; all the brake mechanism is completely housed.

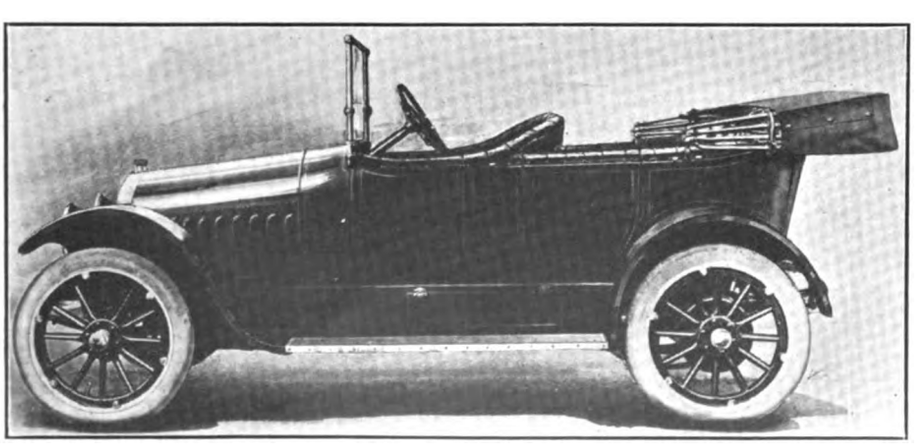
Starting and lighting is by the Aplco system, in which the same machine acts as both motor and generator, the drive both ways being through a silent chain enclosed and running in hard grease.

The wheelbase of the four is 116 inches and of the six 124 inches. On both cars the tires are 34 x 4 all around.

MAIN POINTS OF HERFF-BROOKS FOUR AND SIX

	Four	Six
Model		
Price—		
Touring	$1,100	$1,375
Roadster	1,100	1,375
Make of motor	Herff-Brooks	Herff-Brooks
Number of cylinders	Four	Six
Shape	L-head	L-head
How cast	Singly	Singly
Bore	4½	4
Stroke	5	4½
S. A. E. rating	32.4	38.4
Magneto	Bosch	Bosch
Starting-lighting	Aplco	Aplco
Gearset	3-speed	3-speed
Clutch	Inverted cone	Inverted cone
Wheelbase	116	124
Tires	34 x 4	34 x 4
Wheels	Wood	Wood
Steering	Left	Left
Control	Center	Center
Rear axle	Semi-floating	Semi-floating

Equipment: One-man top with cover and side curtains, two part windshield, electric lighting and starting, headlight dimmer, electric horn, ammeter, concealed tool boxes, speedometer, one extra demountable rim, tire irons, jack, pump, robe and foot rails.



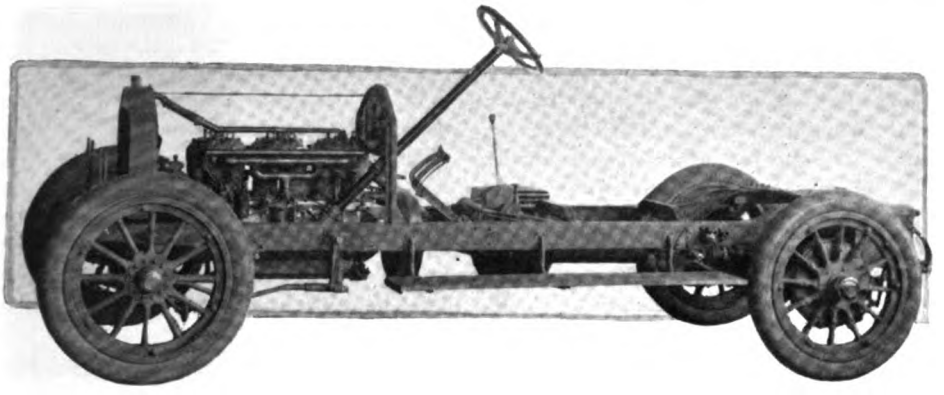
4-40 FIVE-PASSENGER HERFF-BROOKS—SELLS AT $1,100

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Republic Offers More Value

Appearance Bettered by New Body Designs—Features Unchanged.

In a general way the single six-cylinder chassis built for 1915 by the Republic Motor Car Co., Hamilton O., is much the same as its 1914 predecessor; but such changes as have been made have considerably improved its appearance and opportunity has been taken to make some minor mechanical improvements. The price, however, remains unchanged at $2,950, and is the same whether two-, four- or five-passenger body is fitted.



CHASSIS, SHOWING PAIR-CAST MOTOR AND SINGLE LEVER CONTROL

The motor has pair-cast cylinders of T-head design with a bore and stroke of 4¼ x 5, the S. A. E. rating being 43.3; all valves are interchangeable and are 2.25 inches in diameter. The crankshaft runs on four bearings. The cast iron timing gears of 1914 are replaced by steel gears. Lubrication is by a force feed system in which oil is pumped from the usual crankcase reservoir through a dashboard sight feed to feeders leading to each of the main bearings and by ducts through the crankshaft to the lower connecting rod bearings. The cylinders are oiled by oil thrown from the rods.

Gasolene is fed to the carburetter by the Stewart-Warner vacuum system: the 21-gallon tank is suspended at the rear of the chassis. Fuel is drawn by the suction of the motor to a small tank on the dashboard, whence it flows by gravity to the Rayfield carburetter.

The electric equipment of the car consists of a Delco lighting, starting and ignition plant. The Delco system installed on this car has one special feature which distinguishes it from most other Delco designs—the starting drive and the generator drive are independent. The control is also the latest design, starting being accomplished by merely depressing a pedal. The Delco ignition system is a dual design. The running current is supplied by the generator, and the starting current by the battery.

Some change has been made in the clutch, which is still a cone but has 12 spring inserts under the leather instead of the former cork inserts. No change has been made in the operating system; the clutch pedal operates the service brake and another pedal the emergency brake, so that the driver can apply both brakes without removing either hand from the steering wheel. The four-speed gearset, with shafts on Hess-Bright ball bearings, is unchanged.

The springs are of chrome vanadium steel 2 x 38 in front and 2¼ x 50 in the rear where the conventional three-quarter elliptic type is employed. Rebound straps are fitted as part of the regular equipment of the car. The brake drums on the rear wheels are 2½ x 16, affording ample braking surface. The steering wheel, 18 inches in diameter, is mounted on the left side of the car, and control of the gears is effected by a centrally located lever.

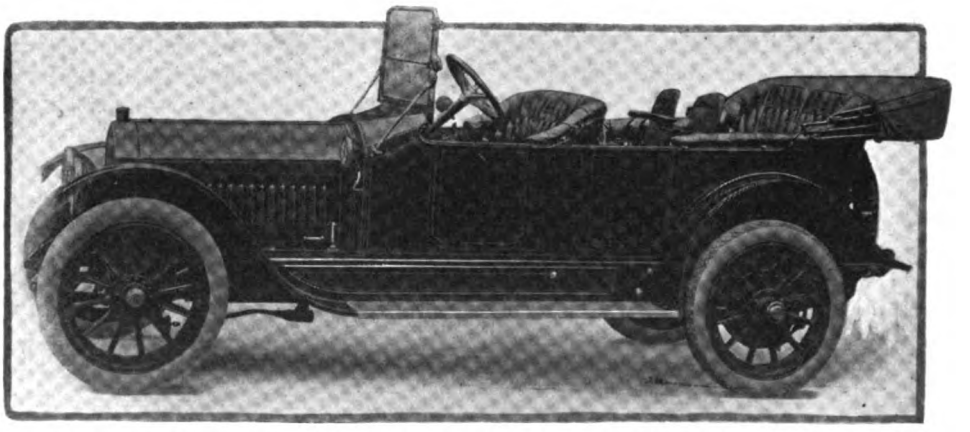
PRINCIPAL DETAILS OF NEWEST REPUBLIC SIX

Price, touring or roadster	$2,950
Number of cylinders	6
Shape	T-head
How cast	Pairs
Bore	4¼
Stroke	5
S. A. E. rating	43.8
Starting-lighting	Delco
Ignition	Delco
Carburetter	Rayfield
Clutch	Cone
Gearset	4-speed
Wheelbase	133
Tires	36 x 4½
Wheels	Wood
Steering	Left
Control	Center
Rear axle	Full-floating

Equipment: Top, cover and side curtains, two-part windshield, Warner flush type speedometer, electric lighting and starting, tools, jack and pump.

The axle is of the full floating type and the shafts and differential run on Hess-Bright ball bearings. In fact, these bearings are used not only in the gear-case and the rear axle, but also in the front and rear wheels.

The channel frame, of the usual section, is 5 inches deep and pressed from 3/16 stock. Gusset plates are formed integral. The frame is narrowed at the front and at the rear is dropped over the rear axle. The tread is the usual 56-inch standard and the wheelbase 133 inches. The wheels are of wood with 36 x 4½ tires on demountable rims.



REPUBLIC SIX, AT $2,950, SHOWING LOWERED AND LENGTHENED BODY

A striking improvement in the appearance of the car has been brought about by the redesigning of the bodies. The cowl has been made longer and its height reduced, the distance between the dashboard and the front seat has been increased 2 inches and the seats have been lowered 2 inches. The general effect of this and other detail changes has been to give the car a longer, lower appearance that is exceedingly pleasing.

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Dealer's Legal Status

If the Man Who Is Towing a Car Uses "Due Care" He Is Not to Blame if Someone Else Trips Over the Rope and Is Injured—Explantory Court Decisions.

By Geo. F. Kaiser

When a motor car is going along a public street or highway towing another car at the end of a rope, a nice question of liability arises when there is a collision with some other vehicle or when a pedestrian is injured.

In the first towing cases which reached the courts the injured persons contended that it was not lawful to tow a car and for that reason the car owners were liable for damages while it was being towed.

Towing Car Held Not Illegal.

The courts speedily disposed of this contention, however, by very sensibly remarking that, if a car broke down on a public street, which is not unusual, it was only to be expected that the owner would remove it and, as the only way this could be done was by towing it to a garage, towing was perfectly lawful and proper as long as it was done in a safe and careful manner.

There is apt to be some confusion if a motorist breaks down on the road and telephones a dealer to tow him in as to who is responsible for accidents while this is being done. The matter is simply decided, however, by finding out who has control while the car is being moved. If the dealer, or his agents, are acting independently of the owner, then the dealer is responsible. If, on the other hand, the owner is controlling the removal, giving orders and directing what is to be done, the dealer is not responsible and the owner is the person who must pay for any injuries which occur.

"Due Care" Only Warning Necessary.

It is not necessary to warn other people in any particular way that there is a rope connecting the two cars, except that "due care" must be used. An illustration of this would be if persons started to drive or walk between the two vehicles, the person in charge of the disabled car would not be considered to be using "due care" unless the presence of the rope was made known to them.

An interesting case is that of Titus vs. Tangeman, reported in 116 New York Appellate Division Reports, 487. A disabled car was being towed along a street, hauled by a rope about 10 feet long. After going a short distance a blockade of traffic was encountered and both machines were stopped near the curb, the rope resting on the pavement.

A mother and daughter out walking endeavoring to cross the street came to a point between the car tracks and the stationary cars. The mother inquired whether she could pass between the cars and, on being assured that she could, she started to step over the rope, when the front car started up, raised the rope and tripped and injured her. The woman sued the driver of the disabled car for damages, claiming that he was negligent because he gave her permission to pass. The court held, however, that as the blockade of traffic had not been broken, it was not to be expected that the forward machine would start up and, as it did not move more than a foot in any event, the driver of the disabled car could not be presumed to have expected it to start and for that reason he was not liable for the accident.

Cab Tower Held Not Liable.

Another similar case was that of Canfield vs. New York Transportation Co., which is found in 128 New York Appellate Division Reports, page 450. It seems that two electric hansoms, owned by the Transportation company, were going north on Broadway in New York City. The power in the rear machine had given out and it was being towed, attached to the front machine by means of a rope which was about six or eight feet long and an inch to one and one-half inches in thickness. One of the company's drivers was in charge of each machine.

When 34th street was reached a traffic officer signaled the machine to stop, which was accordingly done. A woman was crossing Broadway and Sixth avenue, headed for the corner of 34th street. She attempted to cross between the cars, was caught by the rope, thrown down and injured. She accordingly sued the Transportation company for damages.

The court held that under the circumstances the Transportation company was not guilty of negligence any more than if the woman had walked directly into the machine, as the cars were on the street where they had a right to be and had been ordered by the officer to stop at the places where they then stood and that, having attempted to warn her when she endeavored to pass between the cars, they fulfilled the obligation of using "due care," which was imposed upon them and were not in any way guilty of causing the accident.

Borrower of Chauffeur Liable.

If A loans his chauffeur to B, and while the chauffeur is driving for B a pedestrian is run down, it is B who is liable for damages and not A, even though A be the man who pays the driver's salary. This has been decided by the Circuit Court for Wayne County, Mich., in the case of Jan Janik against the Ford Motor Co.

Janik claimed to have been injured by a car just sold by the Ford company, and which was the property of a customer. John I. Werner, Ford dealer in Bronson, Mich., had come to Detroit with a customer named Klein, who purchased and paid for a car. A chauffeur named Groholski was loaned to Klein to drive the car as far as the city's limits. While on this trip Janik was struck and, seeing a Ford company number on the car, he sued the Ford company. The lower court decided against Janik and the appellate court in sustaining this decision said in part:

"Under the undisputed testimony, the motor company had no control over nor interest in the car after it had left its salesrooms, nor in the manner in which it was run, nor in where it went. It could not dictate how the car should be run; the most it could do would be to recall from this special employment the servant it had loaned.

"During Groholski's absence from the salesrooms in this service he was doing the work of Werner, to whom he was gratuitously loaned, on the initiative and request of Werner, who had full right to dictate as to his own property and direct in what manner the car should be operated. He unquestionably could have taken charge and driven it himself, if he saw fit at any time, and, if so disposed, could have discharged the driver and proceeded without him; he was, therefore, for the time being the special master."

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In Salesroom and Garage

H. G. Hurd, formerly manager of the American Radiator Co.'s branch in St. Louis, Mo., and E. P. Rhodes, a former garage manager of the Buick Motor Co.'s St. Louis branch, have formed a company to handle Buick retail sales in St. Louis. The wholesale distribution will be retained by the newly-formed Vesper-Buick Co., at 3205 Locust street, where the new retailers will have their salesrooms.

The H. E. Jackson Carriage Co., Clarksburg, W. Va., has been succeeded by the Jackson Carriage & Auto Co. The officers of the new concern are: President, J. M. Shields; secretary-treasurer and manager, D. R. Michael; directors, John M. Schulte, Anthony J. Schulte and E. M. Gilmore. The company handles the Lexington and Howard cars and the G. M. C. truck.

The Auto Top & Trimming Co. has opened up in Toledo, O., at 141 10th street; the proprietors are W. W. Williams and Guy P. Apt. They will make and repair tops, cushions, hoods and covers.

John A. Steele, formerly of Boston, has purchased the garage of Captain F. Kimball, Albion street, Wakefield, Mass. He will improve the premises and the equipment and continue the business.

The Keystone Rubber Co., 413 West 3rd street, Davenport, Ia., has opened a branch in Moline, Ill. It is at 1327 5th avenue; R. B. Altenburg and H. G. Bowman are the proprietors.

Landry Franklin, formerly of Mansfield, La., has removed to Leesville, in the same state, and will open a repair-shop; he is erecting a new building for this purpose.

R. P. Brown, Miami, Fla., has sold his interest in the Belcher & Brown Auto Co. to his partner, E. N. Belcher, who will continue the business as the Belcher Auto Co.

Clarence H. Rice, Camden. N. Y., has leased what formerly was the Central Garage and will reopen a garage there; he also will carry farm tools and implements.

S. E. Milliken, Dallas, Tex., has secured plans for a three-story, brick garage, to be erected at 604 South Ervay street; it will cost approximately $20,000.

The Hudson Stuyvesant Co. has opened salesrooms at 1914 Euclid avenue, Cleveland, O., under the management of F. E. Stuyvesant; the Hudson is stocked.

Henry McIntire, formerly head of the Venable & Miller machine-shop in Aledo, Ill., and James Yerkey are about to open a garage in Viola, Ill.

D. E. Marriott, Seattle, Wash., has opened up at 724 Pine street under the style Auto Tire & Rubber Co. He will stock tires and accessories.

The Greencastle Garage, Greencastle, Ind., has been sold by Cassidy & Browning to Guy Coons, formerly of Advance, Ind. Coons will operate it.

L. T. Williams, Cincinnati, O., is having a garage built at 2620 Colerain avenue; he will secure the agency for a medium-priced car.

The Walter Williamson Co. Garage, Albany street, New Brunswick, N. J., has been taken over by Frederick W. Elb; he will operate it.

Harry Painter, Tarentum, Pa., is about to erect a garage; he will utilize the site of a livery stable on 3rd avenue, which he has purchased.

The Direct Lubricant Co. has opened up in Galveston, Tex., at 2411 Strand street; it will handle oils, supplies and accessories.

The Lewis Automobile Co., Walton and Washington avenues, St. Louis, Mo., has been appointed distributers for the Chandler.

Johnson & Brand, garage operators in Columbia, Ind., have dissolved partnership; Johnson continues the business.

G. E. Hildebrand has retired from the Reinbeck Auto Co., Reinbeck, Ia. W. C. Runft is now sole proprietor.

Walter Baker and Matthew Hannan, Kanawha, Ia., have formed a partnership and will open a garage.

The Stockton Auto Supply Co., Stockton, Cal., has opened a new store at 208 North Eldorado street.

W. W. Conley, St. Paul, Minn., plans to erect a new garage and repair-shop on Mackubin street.

R. E. Valentine and H. L. Wilson have opened a garage in Cumberland, Md. It is on George street.

Charles Schick, Davenport, Ia., will build a garage at 413 West 3rd street; it will cost $15,000.

The Lozier will be handled hereafter in Boston by the Leghorn Motor Co., 793 Boylston street.

John Ditmer and Walter Ruggles, New London, Conn., have opened a paint- and repair-shop.

Herman A. Wahl, 802 Albany street, Schenectady, N. Y., is erecting a garage at that address.

Walter W. Cameron, Hanford, Cal., plans to open an accessory and supply store.

W. S. Gant, Greenfield, Ind., is building a new garage on East Main street.

Ralph Kendell, Plymouth, Ill., has taken over the De Weese Garage.

George A. Black, Gardner, Mass., will erect a garage on Park street.

LITERATURE RECEIVED

Miller Rubber Co., Akron, O.—"Safety Always" booklet, giving digest of traffic statutes of states of Ohio, New York, Pennsylvania, Indiana, Michigan and Illinois, together with common sense rules of the road.

National Bar Spring Co., Pittsburgh, Pa.—Booklet, showing construction of car frame and spring suspension system for pleasure cars, cyclecars, taxicabs and heavy trucks.

National Highway Association, So. Yarmouth, Mass.—Phamphlet, "For National Highways and Good Roads Everywhere Westgard Rides Again."

National Association of Corporation Schools, New York City—Monthly Bulletin.

Racine Rubber Co., Racine, Wis.—Catalog, tires and accessories.

Kelly-Springfield Motor Co., Springfield, O.—Motor truck catalog.

S. A. E., New York, N. Y.—Part I, Vol. 9, Transactions, 1914.

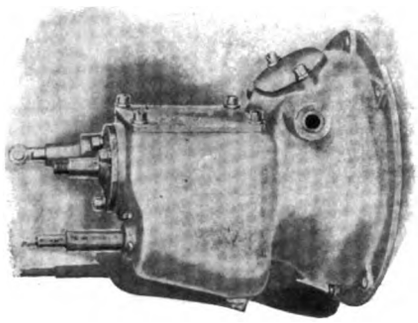
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RECENT DEVELOPMENTS in ACCESSORIES

Two-Speed Gearset for Light Cars.

A two-speed gearset suitable for light cars having motors with cylinders about 2¾ x 4 and weighing under 1,200 pounds has been placed on the market by the Fuller & Sons Mfg. Co., Kalamazoo, Mich. It is designed to be bolted to the engine crankcase, the housing being provided with flanges for the purpose as the accompanying illustration clearly shows.

Complete with clutch, which is of the multiple disk type, the gearset weighs a trifle under 25 pounds. The casing is a high grade aluminum alloy and the gears of 3½ per cent nickel steel and the bearings are single row annular ball and



FULLER TWO-SPEED GEARSET

phosphor bronze. The clutch disks are faced with Raybestos and are of sawblade steel. Thrust is taken by a ballbearing which has wearing surface sufficiently large to give long life.

By removing the 12 bolts which fasten the gearcase to the crankcase the entire gearset can be removed, while covers over the clutch and gears can be removed with a screwdriver. With a two-to-one gearing on low speed the motor does not have to be raced to get into high speed, and this reduction is a good one for the average hill work as it gives a fair car speed at a moderate r. p. m. rate of the motor.

Senrab Carburetter Uses Kerosene.

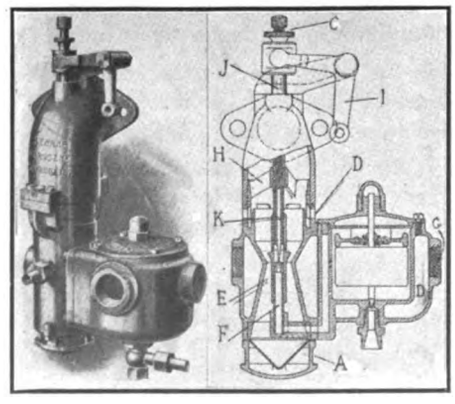
Among the most recent of the carburetters designed to solve the problem of the use of kerosene as a fuel is the Senrab, manufactured by the Senrab Carburetor Co., Sea Cliff, L. I., which, though it embodies features that are familiar in gasolene carburetter design, has combined them in a way that is unusual, as the accompanying illustration makes plain.

The exterior of the carburetter has an L shape, the upright part being formed by the mixing chamber and intake pipe connection, the float chamber being attached to the lower part of the upright near the bottom. There is but a single adjustment, controlled by a nut at the top of the carburetter.

The float chamber is of the conventional type; the float acts on the needle valve through a pair of levers above the float. Around the float chamber is a jacket, D, to which is admitted hot exhaust gas through a pipe connected at G. The thin film of kerosene between the walls of the float and the float chamber is heated before passing into the mixing chamber.

In the mixing chamber there is a venturi tube, E, the bottom of which is open to the atmosphere through screened openings A; the top of the tube opens into the mixing chamber. Kerosene passes through the passage F to the spray nozzle, which does not open directly into the mixing chamber through a top jet but discharges through a number of small horizontal holes, as shown.

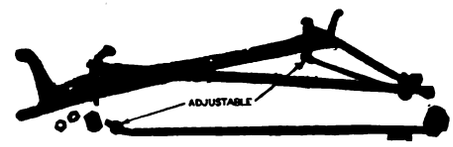
The fuel opening in the nozzle is controlled in a somewhat peculiar manner. A needle valve K with a long taper regulates the area of the opening while the horizontal holes referred to are drilled in a telescoping tubular member which slides over the spray nozzle proper. The adjustment at the top of the carburetter serves to raise or lower both the needle valve and the telescoping perforated tube.



SENRAB CARBURETTER

The openings at the bottom of the mixing chamber constitute the main air intake; auxiliary air is taken in through openings D above the venturi. These openings are controlled by an interior sliding ring H, which is also adjustable from the top. The venturi is also provided with a hot jacket which heats the incoming air, the heated condition of both air and fuel going far to prevent condensation of the vapor after entering the manifold.

Gasolene is used for starting and running until the engine is warmed up, a gasolene inlet being provided leading into the mixing chamber. The throttle lever I is connected up to the control in the usual way, and may be swung round either to right or to the left and may be turned either upward or down-



SAGER FORD RADIUS ROD

ward to suit the conditions under which the installation is made.

The Senrab carburetter is made in eight sizes from ¾ to 4 inches. Prices range from $15 to $60 and the manufacturers offer a discount of 20 per cent to dealers and 10 per cent to manufacturers using the carburetter on their engines.

Auxiliary Radius Rod for Fords.

To provide an extra support for the front axle of the Ford car the J. H. Sager Co., Rochester, N. Y., has placed on the market the auxiliary radius rod shown in the accompanying illustration. The device is attached as indicated and affords a brace for the bottom of the axle which otherwise has a tendency to bend backward.

To attach the device it is only necessary to remove the two nuts under the axle, slip on the radius rod and screw on the two special nuts supplied with the outfit. The opposite end of the rod is attached at a proper distance from the axle to prevent bending or buckling the main radius rod. Ample provision is made for backward and forward adjustment. The list price of the radius rod is $3.

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Simplifying Truck Maintenance Records

Seven Form Locomobile System That Facilitates Data Filing—Can Be Operated By One Man.

By way of assisting the purchasers of its vehicles to keep accurate data regarding performance costs, and thus to maintain its transportation system at the maximum efficiency, the Locomobile Co. of America, Bridgeport, Conn., has developed a simple cost stock-keeping and repair system which it supplies gratis to those who purchase its products.

The value of any such system manifestly increases almost in direct proportion to its simplicity. Suffice to say that the Locomobile system should prove very valuable. The system requires the use of seven blanks. They are as follows: The driver's daily report, the stock card, the combination supply card and repair slip, a sheet for the variable expenses of each vehicle, a tire repair sheet, a monthly statement sheet for the cost of operation of each truck and a sheet for the total cost of operation of all the trucks in service. The latter is posted monthly or yearly.

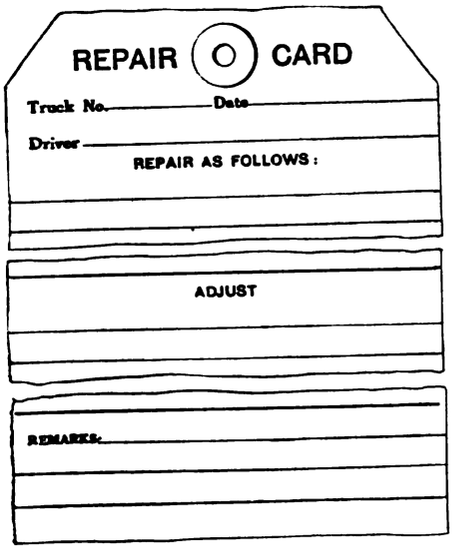


FIG. 2—OBVERSE SIDE OF COMBINATION SUPPLY CARD

Charge Up Operating Cost.

There are a number of good points in the system and some that are not so good. Not the least important of the good points is that the system can be worked at a minimum cost. A very small space is required for the cards and sheets, three filing boxes for the cards and four loose leaf binders for the sheets being sufficient. One man of average intelligence should be able to look after all the various cards and forms. There should be no difficulty in obtaining someone qualified to do the work at a salary of not more than $25 per week. In this connection it is pertinent to add that the salary of this employe should be charged to the cost of operating the vehicles; this point evidently has been overlooked in the system.

Should Include Tire Costs.

Another place where the system might be made complete and, therefore, more valuable, would be to provide for the inclusion of tire costs in the main cost sheets. This could be figured on the cost per mile or the cost per ton-mile.

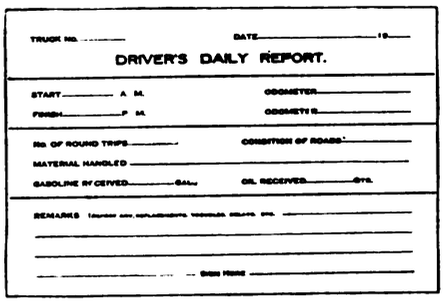


FIG. 1—DRIVER'S REPORT CARD WHICH IS FILED DAILY

Of all the various forms that go to make up the system, but three have permanent value. These are the stock card, the tire repair and the total cost sheet, which covers all of the trucks.

The driver's report, the stock card and the combination supply and repair cards are printed in black on cardboard and are of different shapes, and the other four sheets are the same in size, 13½ x 8½ inches, and are printed on foolscap with all vertical lines and the two heading lines at the top in red and the transverse lines in blue.

Taking these cards in the relative order of their importance in the system, the driver's daily report comes first. This card, 6 x 4 inches in size, Fig. 1, includes all of the items incident to the cost of operation and the work of the truck that come under the observation of the driver. At the left of the card the driver writes the number of the truck he is operating, putting the date of the report at the right. Below he inscribes at the left the time of starting out with the truck and the time of returning to the garage at the close of the day's work. Opposite these items he records the mileage reading of the odometer at the beginning and at the end of the day, thus making it possible for the clerk or superintendent who looks over the cards to calculate the truck's mileage for the day in a few seconds time by simple subtraction.

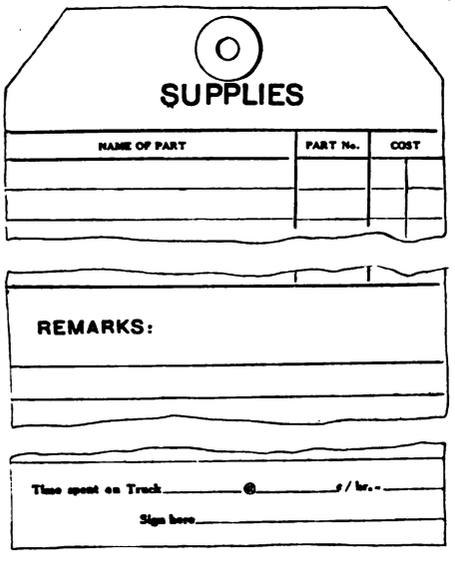


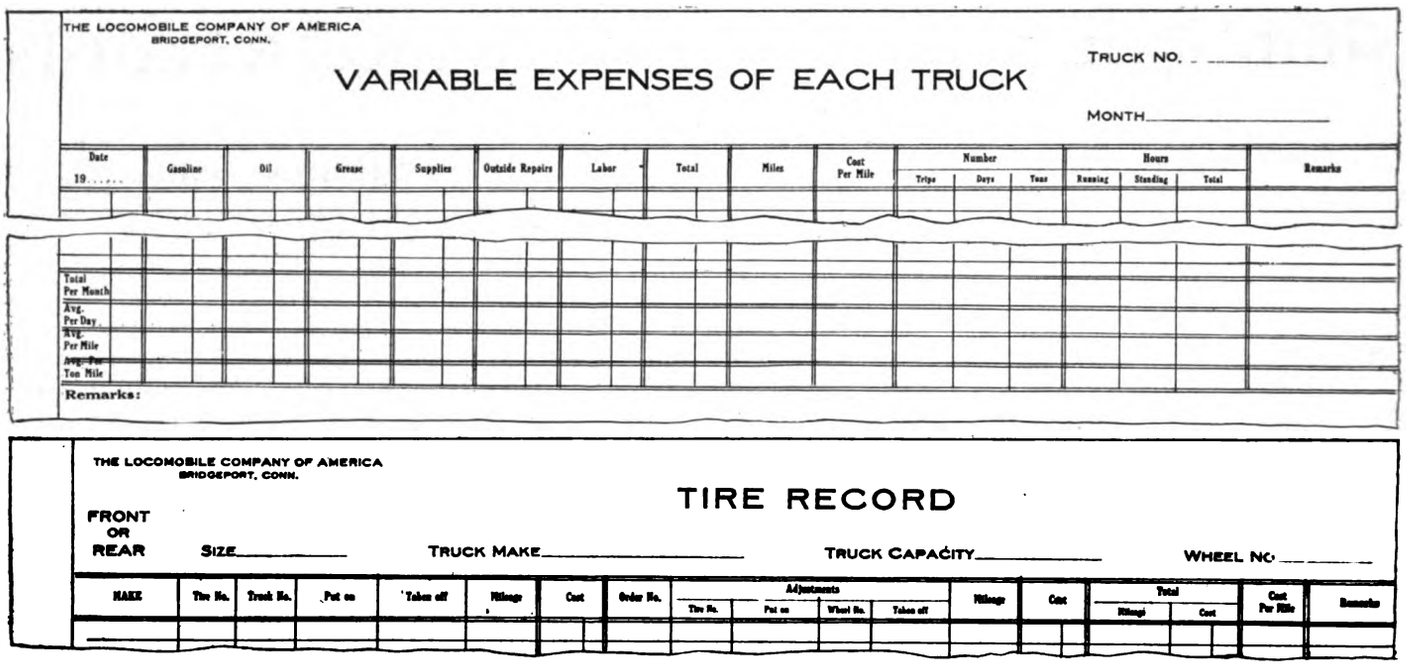
FIG. 3—REVERSE SIDE OF COMBINATION SUPPLY CARD

The number of round trips that the truck makes are recorded by the driver in the second section of the card, where he puts also the number of gallons of gasolene he received, the condition of the roads over which he traveled and the amount of oil used, measured in quarts. At the bottom of the card a space is left for remarks and the driver is instructed to write on the back of the card what he has not room for on the front.

Uses Card Filing System

These reports may be left in the garage on a convenient window sill or other spot, where the drivers may obtain them without interrupting the work of anyone else. After having filled out the card, the driver turns it in at the office, to the garage foreman or truck superintendent.

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THE LOCOMOBILE COMPANY OF AMERICA
BRIDGEPORT, CONN.

VARIABLE EXPENSES OF EACH TRUCK

TRUCK NO. _____

MONTH _____

Date 19.....	Gasoline	Oil	Grease	Supplies	Outside Repairs	Labor	Total	Miles	Cost Per Mile	Number: Trips	Number: Days	Number: Year	Hours: Running	Hours: Standing	Hours: Total	Remarks
Total Per Month																
Avg. Per Day																
Avg. Per Mile																
Avg. Per Ton Mile																

Remarks:

THE LOCOMOBILE COMPANY OF AMERICA
BRIDGEPORT, CONN.

TIRE RECORD

FRONT OR REAR SIZE _____ TRUCK MAKE _____ TRUCK CAPACITY _____ WHEEL NO. _____

MAKE	Tire No.	Truck No.	Put on	Taken off	Mileage	Cost	Order No.	Adjustments: Tire No.	Adjustments: Put on	Adjustments: Wheel No.	Adjustments: Taken off	Mileage	Cost	Total: Mileage	Total: Cost	Cost Per Mile	Remarks

FIGS. 4 AND 5—TWO BLANKS WHICH SERVE TO KEEP TRACK OF VARIABLE EXPENSES OF EACH TRUCK INDIVIDUALLY; THEY ARE FILED IN A BINDER

After the items have been transcribed from this card to the variable expense sheet, the card is filed according to the number of the truck.

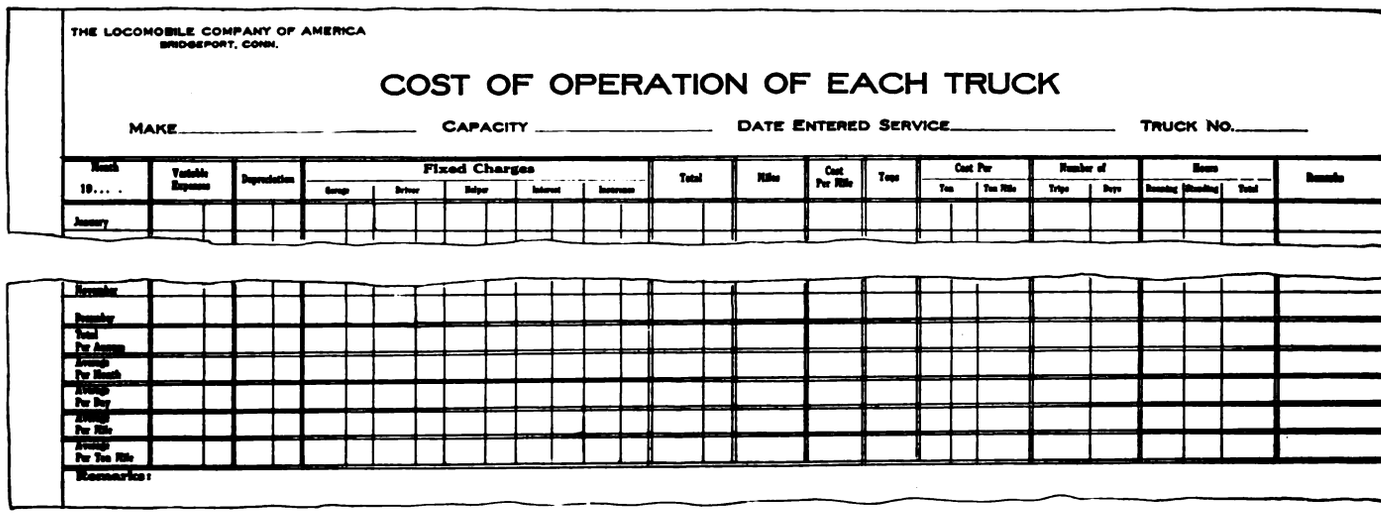
Items are taken from one other card report, the combination supply and repair card, Fig. 2 and Fig. 3, to make the variable expense account complete. This card or tag is 4 x 6 inches and is red with black lettering. On the front of the card are the words "Repair Card." with spaces for the truck number, date and driver's name. Then come the instructions as to the parts that the mechanic is to repair. Adjustments have a separate division below with a space for remarks at the bottom. In case there is more than one mechanic in the garage, they can be instructed to sign the cards before turning them in to the office, signifying that the job is completed and that theirs is the responsibility for the repair or adjustment.

On the reverse of the card, Fig. 3, the supplies are listed as used. The name of the part with its number and cost are written at the top and half of the card is taken up by the space for this detailed information. The lower half of the card is for remarks, with the total time spent in repair or adjustment to the mechanism of the truck with the cost per hour in cents and the mechanic's signature.

Charging Up Variable Expense.

When the card has been looked over by the garage foreman or superintendent it is sent to the record clerk, who enters its items in the variable expense sheet and files the card under its truck number.

Next is the variable expense sheet, Fig. 4. This sheet is one of the larger foolscap sheets, perforated for looseleaf binding, as are all the other larger sheets. On it are only the variable expenses. Each truck has a separate sheet, filled out monthly, having lines for 31 entries. At the top of the sheet, to the right, are written the truck number and the month for which the report is made out. Below these items are two red lines running crosswise of the sheet and it is between these lines that the different headings are printed. At the left is a space for the date, the year being inscribed at the top and the date of each day being inserted below. Gasolene is the first item, its cost being inserted from the driver's reports each day. Oil follows and grease comes next. The cost of supplies, which includes the spare



THE LOCOMOBILE COMPANY OF AMERICA
BRIDGEPORT, CONN.

COST OF OPERATION OF EACH TRUCK

MAKE _____ CAPACITY _____ DATE ENTERED SERVICE _____ TRUCK NO. _____

Month 19....	Variable Expense	Depreciation	Fixed Charges: Garage	Fixed Charges: Driver	Fixed Charges: Helper	Fixed Charges: Interest	Fixed Charges: Insurance	Total	Miles	Cost Per Mile	Tons	Cost Per: Ton	Cost Per: Ton Mile	Number of: Trips	Number of: Days	Hours: Running	Hours: Standing	Hours: Total	Remarks
January																			
February																			
Total																			
Per Annum																			
Average Per Month																			
Average Per Day																			
Average Per Mile																			
Average Per Ton Mile																			

Remarks:

FIG. 6—BLANK FOR MONTHLY SUMMARY OF MAINTENANCE COST OF EACH TRUCK

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parts used, is next inserted. A space is left for outside repairs in case there should be such, while labor in the next column covers the cost of repairs and adjustments made at the home garage. The items already mentioned are then totaled and the cost inserted so that in each line of the sheet is a report of the expense of the truck during any certain day; thus on the fifth of the month, if anyone wanted to find the cost of Truck No. 7, for the 4th of the month, he would look on the sheet headed Truck No. 7 and following the center column down to the fourth line he would have before him a report of the total cost of operation of the truck on the fourth of the month.

But this is not the only purpose that this sheet serves. Beyond the total cost of truck operation is the tire record sheet, Fig. 5. This sheet is also one of the looseleaf filing sheets and is arranged for 43 entries. At the top of the sheet to the right will be noted the words, "Front or Rear." If the tire be a front tire the word "Rear" can be crossed off, or vice versa. Next the make of the truck is written in, followed by its capacity. Each wheel must have a number under this system and that is put at the right at the top of the sheet. There should be four sheets for every truck in service, one for each wheel.

Keeping Track of Adjustments.

In the main part of the sheet the make of the tire is inscribed in the left-hand column, followed by its number, which is followed, in turn, by the truck number. The date that the tire is put on the wheel is next in order, this being followed by the date that it is removed. The mileage of that particular tire is recorded, the cost is inserted, and the order number by which the tire was purchased is inscribed. Next, under the main head "Adjustments," the tire number is again recorded, with the date that it was put on the wheel. The wheel number is repeated and the date that tire was removed from the wheel for adjustment is recorded. Spaces are left for the mileage and the cost and then under the heading "Total" the totals of the mileage and the cost are recorded. A single column remains for the cost per mile and another for remarks.

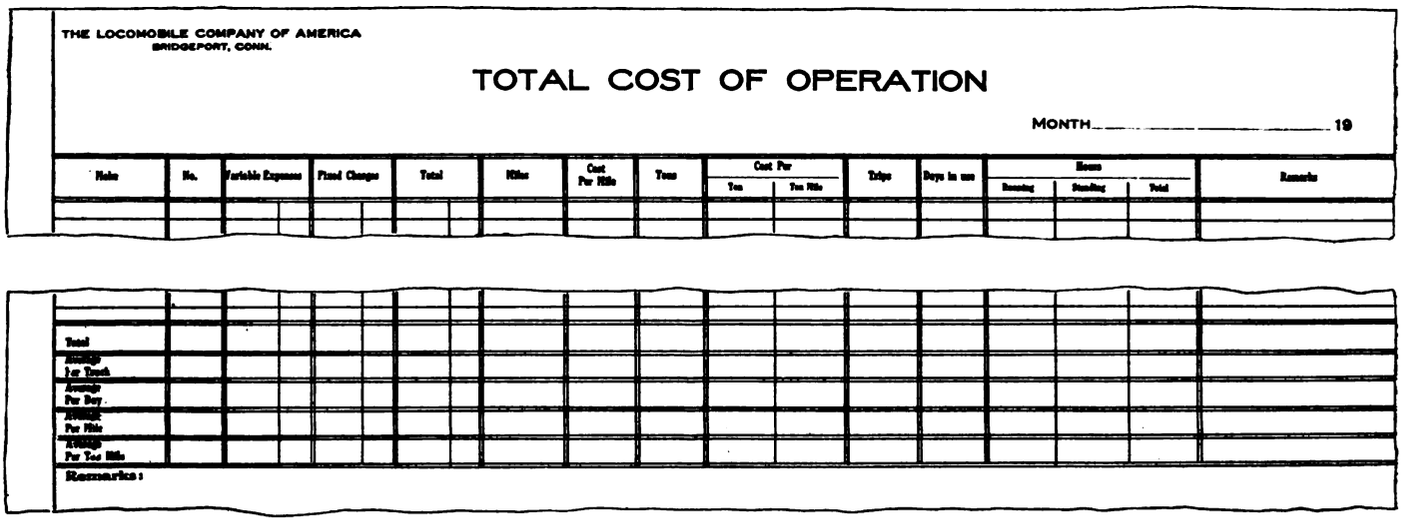
Entering Stock Parts on Hand.

Similar to the tire record in some respects the stock card, Fig. 8, is smaller and has not the value in the cost system that the tire record has. This report is a cardboard 6 x 4 inches, arranged for 16 entries, with the name of the article at the top. The part number is written at the right, with the maximum and minimum number of that particular part that should be kept on hand. Below a double red line are the main headings of the card, the order number and the date ordered being put at the left. Next comes the name of the person or person or firm from which the part was ordered, with the quantity received and the date of the receipt. The cost is recorded next, this being divided into two parts, the total cost and the cost per unit. The balance on hand and their value are written at the right.

There is one card for each part kept on hand, and as these are used the card is posted. When the entry-clerk looks over the combination repair and supply card he knows that parts have been used in repairing a truck. It remains for him to post the stock card, using as his source of information the combination repair and supply card. This should be done each day and the stock cards filed in alphabetical order.

Treats Trucks Individually.

Next in order is the sheet that covers the cost of operation of each truck, Fig. 6, the third of the larger looseleaf sheets. On this are given a monthly summary of the information gleaned from the


THE LOCOMOBILE COMPANY OF AMERICA
BRIDGEPORT, CONN.

TOTAL COST OF OPERATION

MONTH_____ 19

Make	No.	Variable Expense		Fixed Charges		Total		Miles	Cost Per Mile	Tons	Cost Per		Trips	Days in use	Hours			Remarks
											Ton	Ton Mile			Running	Standing	Total	
Total																		
Average Per Truck																		
Average Per Day																		
Average Per Mile																		
Average Per Ton Mile																		

Remarks:

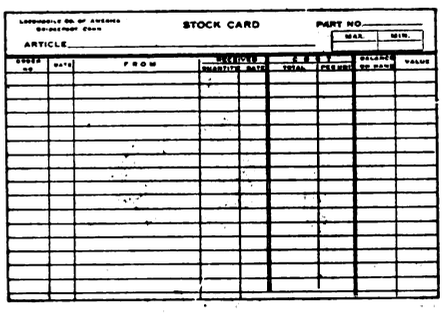
FIG. 7—BLANK THAT IS USED TO RECORD TOTAL COST OF OPERATION OF ALL TRUCKS IN THE FLEET

the sheet is ruled for the notation of service rata. First in this division is the number of miles that the truck covered each day, followed by the cost per mile for the same period. The number of trips made, the number of days in service and the number of tons carried, come under the heading of "Number." Next, under the heading "Hours" is the time that the truck was running, the time that it was idle, with the total of the time consumed. A space for remarks completes the main part of the sheet.

Recording Service Data.

The lower part is arranged for the total per month of each item, the average per day, the average per mile and the average per ton-mile, another space for remarks being left at the base of the sheet. At the end of each month the totals are transcribed from this sheet to the sheet which covers the total cost of operation of each truck.

Another sheet that covers variable expenses as well as a very important side


STOCK CARD

PART NO.

MAX. MIN.

ARTICLE

ORDER NO.	DATE	FROM	RECEIVED QUANTITY	RECEIVED DATE	COST TOTAL	COST PER UNIT	BALANCE ON HAND	VALUE

FIG. 8—CARD FOR CHECKING PARTS IN STOCK

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other sheets so far described. The form is arranged to cover a period of one year, and it is on this card that the fixed charges, generally known as the overhead charges, make their first appearance. The sheet is posted at the close of each month.

Across the top of the sheet the make of the truck, its capacity, the date it entered service and its number are inserted in the order named. There is a single sheet for each truck. The names of the months, headed by the number of the year, follow the left column, the next column being devoted to the totals from the sheet covering the variable expenses.

Depreciation is written in in dollars and cents instead of in percentage figures, as is usually done. Then the fixed charges are itemized. In this case, these include the salary of the driver and his helper, preceded by the garage charge, which is always the same when the trucks are stored in a business firm's service station or in a public garage. In case the trucks are kept at a public garage, the monthly charge for storage, etc., can be transcribed from the garage bills. In the case of the private garage, the storage charge would be the rent of the building or the rent of the land or a percentage of the value of either or both. After the helper cost has been disposed of, the interest is computed and inserted, followed by the insurance charges. All the foregoing items are totaled in the center column and the second half of the sheet is left for service facts and figures.

First is the number of miles that the truck traveled each month, with the cost per mile and the number of tons it carried, all these being totals of the items covered in detail by the variable expense sheet. The cost per ton and ton-mile are inserted next and it will be noted that the cost per ton column is divided for dollars and cents, whereas the column for the cost per ton-mile is left for cents only. Next in order are the number of days in service and the number of trips made during those days, followed by the number of hours that the truck was running and standing with their totals. Remarks can be inserted in the narrow margin at the right.

Below the names of the months at the right of the card the divisions are similar to those correspondingly placed in the variable cost sheet, except that they are yearly totals instead of monthly totals, and monthly averages instead of daily averages.

Last in the system and forming a complete total record is the sheet entitled "Total Cost of Operation," Fig. 7. In its arrangement this sheet is similar to the other cost sheets described, but it is much more simple. Besides being a monthly summary it can be used as a yearly summary of all the trucks used.

Only one notation is made above the double red line of this sheet, this being the month of the year for which it is posted. Below this the trucks are listed according to their make and their numbers. The total of the variable expenses for each truck and each month or each year, depending upon whether the sheet is used as a yearly or a monthly report, follows. The fixed charges come next in order and the total of both these cost columns is inserted next. Then comes the number of miles that the trucks have covered per month or per year, and this is followed by the cost per mile and next in order comes the number of tons carried. The cost per ton and per ton-mile is then computed and inserted and the number of trips that the vehicles make are entered.

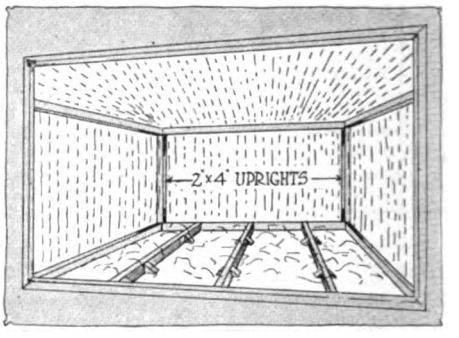
At the bottom of the sheet are the totals and averages as in the other main sheets of the system. These give, first, the total of each item; second, the average per truck; third, the average per day; fourth, the average per mile, and, fifth, the average per ton-mile, with another space for remarks.

2x4's as Basis of Attractive Window

King's Effective Display Cost But $100.

The King Motor Car Co., Detroit, is displaying a 1915 King in one of its factory show windows on Jefferson avenue in a very attractive yet simple setting. Upon a wood frame 10 feet square and 1 foot from the ground the ceiling and sides have been spread with tufted yellow velour, while the floor is covered with yellow gauze. The framework and the carpenter's bill amounted to about $25, while the renting of the draping and the window trimmer's bill amounted to from $50 to $75.

A display entirely similar but made with less expensive cloth and at the same time fully as striking would cost $45 to $50; it would require 350 to 400 yards of cloth at 6 or 7 cents a yard, which would be about $24 or $28, while the framework and carpenter's wages would not be over $20 to $25.



THIS IS HOW THE 2x4'S WERE PUT TOGETHER AS A BEGINNING

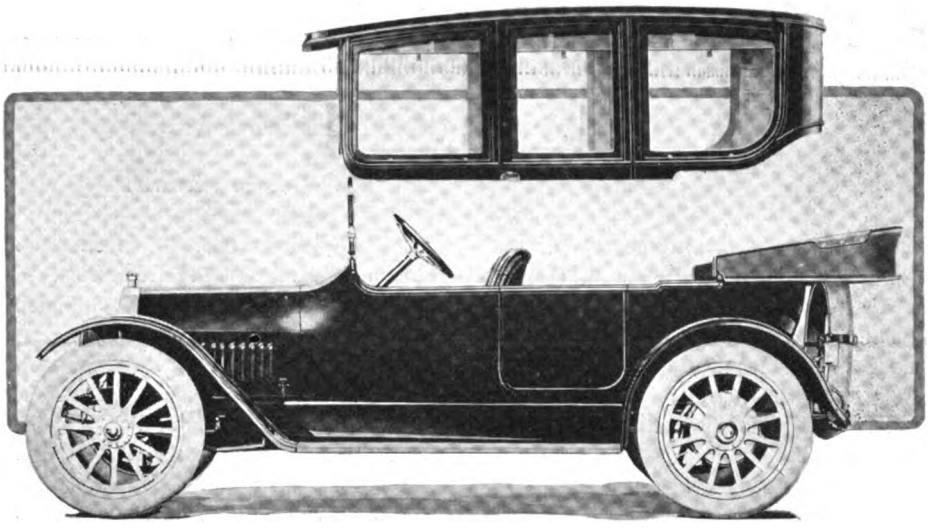


INEXPENSIVE CLOTH MADE A SIMPLE AND EFFECTIVE SETTING

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Kissel Has New Motor and Detachable Sedan

Enclosed Car Superstructure May Be Attached and Detached With Little Labor.



DETACHABLE TOP FITS SNUGLY OVER TOURING BODY

The 1915 line of the Kissel Motor Car Co., Hartford, Wis., will include a four-cylinder car at a lower price than has heretofore been placed on any Kissel car, and one of the features of this machine will be a detachable sedan top for winter use. With regulation touring body the price of the car is $1,450; the sedan top, which can be placed over the touring body, costs $350 extra.

The equipment of the car is complete, including top, cover, side curtains, Kissel electric starting system, Westinghouse lighting and ignition, and the usual complement of tools, etc.

The top fits snugly over the touring body and is so simple in construction that two inexpert men can make the changes with a screwdriver and a wrench. Six bolts and sockets, three on each side, and four top irons, one at each corner, are the only fastenings, and these are neatly hidden under the leather lining. The electric wiring connects automatically as the upper and lower halves meet. To convert the touring car it is necessary to remove only the windshield, summer top and moulding and to screw a metal plate over the door latches.

The four-cylinder motor of the car is a new product of the Kissel factory; it has four block-cast L-head cylinders 4¼ x 5½, with an aluminum crankcase having the dividing line two inches below the crankshaft. The water jackets at the top of the cylinder block are left open and covered by a plate carrying the water outlet and held in place by bolts. Lubrication is by the usual circulation and splash system with a large reservoir at the bottom of the crankcase.

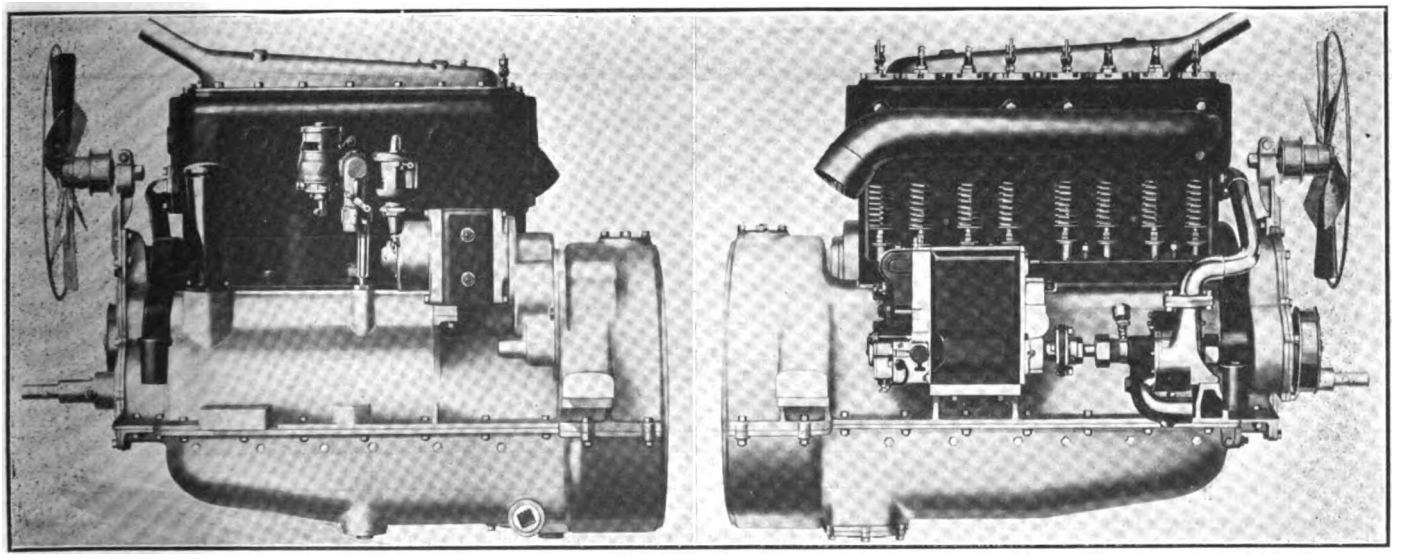
Quiet running is facilitated by the use of only three timing gears for driving the crankshaft, circulating pump and magneto; the gears are of the helical type with wide faces. The carburetter is a Stromberg. Cooling is effected by a honeycomb radiator.

The gearset is bolted up to the crankcase, forming a unit power plant, and provides three speeds; the clutch is a leather-faced cone, accessible for adjustment through a large hand-hole. The leather facing is backed by steel spring inserts. The entire transmission is simpler and lighter than in previous models.

The rear axle, of the floating type, is of the usual modern construction, with the differential mounted on taper roller bearings; bearings of the same type are used on the front and rear wheels. The gearshafts run on imported F. & S. annular ball bearings. Center breakage of springs is avoided by eliminating the usual center bolt, a retaining plate between the center clips holding the leaves in position so that they are strong where strength is needed.

Storage facilities are unusually good in the new car. Under the rear seat is a compartment 43 x 15½ inches and there is also storage space under the front seat, the gasolene tank being mounted at the rear of the chassis and fuel taken to the engine by the Stewart vacuum system; the tank holds 15 gallons.

Wheels are of wood fitted with 36 x 4 tires both front and rear; the wheelbase is 121 inches.



NEW KISSEL MOTOR HAS REMOVABLE COVER OVER WATER JACKETS AND CRANKCASE SPLIT BELOW SHAFT LINE AND FORMS A UNIT WITH THE GEARSET

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Advanced Maintenance

REPAIRING THE DAMAGED FENDER

By George Fernwell

Another way than that described last week of bending the stretched portion of the rim outward or sidewise to permit the body of the fender to be curved to a lesser radius than the normal curve indicated by the templet is simpler and quicker but a little more difficult, as Fig. 1 will explain.

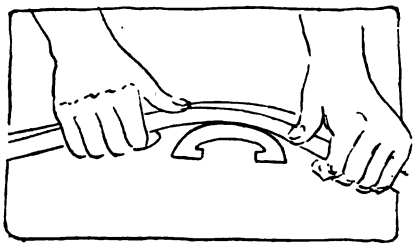


FIG. 1—BENDING FENDER RIM OUTWARD OR SIDEWAYS TO PERMIT BENDING BODY TO LESS THAN NORMAL RADIUS

Clamp a steel bar by means of two clamps to the rim so as to hold the fender in its purposely bent inward position. See Fig. 2. With both clamps tightened as directed, the rim should compare with the templet about as shown in Fig. 3.

The next step, that of contracting the curved wall of the rim so that it will lie flat, will not be found so easy. For the benefit of the workman who already possesses some skill and experience the description of this repair will be finished as concisely as possible, afterwards indicating how a novice may acquire an understanding of the method of contracting sheet metal.

Place the fender in as firm and convenient a position as possible. See Figs. 2 and 4 for alternative positions, in one of which a metal block is held by the left hand under the rim and in the other the rim is supported during the subsequent hammering on the end of a suitable heavy iron bar or mandrel.

With the rim supported by either method take a small mallet with a clean, smooth face and lightly straighten or flatten the rim adjacent to the portion of the curve upwards away from the supporting iron block or bar so that the rim, where purposely bent, looks like Fig. 7. With pencil or chalk roughly trace a curve where the curved portion merges into the flat portion of the rim.

The most quickly effective work in contracting the rim can be accomplished with a hammer shaped like Fig. 5, providing it is in skilled and accustomed hands. Unskilled hammering, however, will probably result in completely spoiling the rim. A mallet shaped like Fig. 5 requires as much skill as a hammer to use it effectively, but in unskillful hands it is less likely to inflict irreparable damage. If an assistant is available to hold the fender firmly with the rim fairly resting on the mandrel, slow but much safer work may be attempted by the use of a block of wood shaped at one end like the hammer or the mallet, striking the block with a hammer.

With the fender held firmly on the mandrel commence at one end of the curve marked with pencil or chalk and strike a series of blows, following the mark completely along the curve. Each succeeding blow should overlap the preceding one, until, when the course of blows is finished, a kind of smooth fillet has been formed where the curved portion of the rim merges into the flat portion, as indicated by the curve marked with pencil or chalk. The curved portion will have the appearance of part of a cone. For the sake of clearness the curved portion of the rim, when further referred to, will be termed conical.

From now on the object of the hammering process is to attack the base of the conical surface, which in effect forms a mound, by a series of blows similar to the first course of blows. Each succeeding series of blows will drive the fillet which joins the conical surface to the flat surface further towards the edge of the rim, gradually obliterating the cone and extending the area of flat surface.

Any attempt to hasten matters by striking blows at the conical surface in such a manner that they do not overlap the preceding blows will be sure to cause failure.

Although the metal will respond readily to properly directed blows during the process, some difficulty will be experienced towards the last when the conical surface has been nearly worked out so that the last course of blows will have been struck quite close to the extreme edge of the rim.

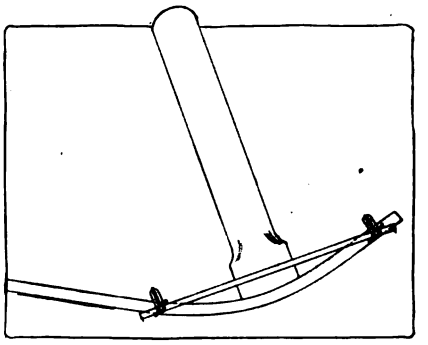


FIG. 2—FENDER BENT INWARD EXCESSIVELY AND HELD BY STEEL BAR AND A PAIR OF CLAMPS

The fact that at this stage the conical mound will have practically disappeared makes it necessary to apply another method for the final smoothing out of the extreme edge. In other words, as long as there is a conical mound of sheet metal against the base of which to direct blows, so long only will the described

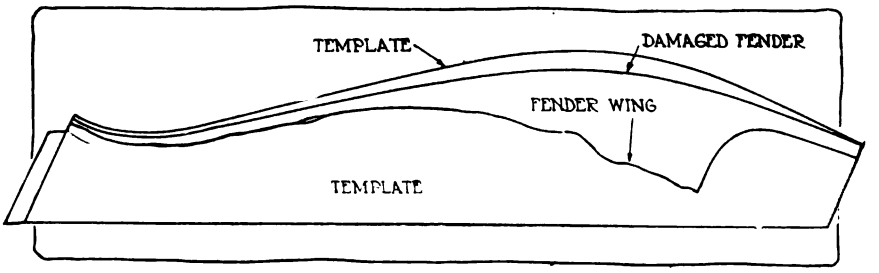


FIG. 3—APPLYING TEMPLATE TO DEFORMED FENDER TO DETERMINE LOCATION AND EXTENT OF MALFORMATION. TEMPLATE IS MADE ON PAPER OR SHEET METAL FROM THE UNDAMAGED FENDER ON OPPOSITE SIDE OF THE CAR

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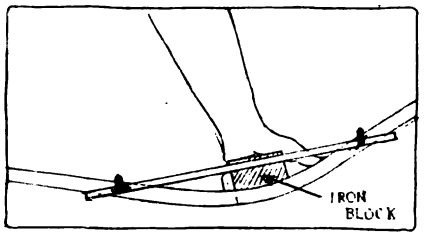


FIG. 4—IRON BLOCK HELD IN THE HAND TO SUPPORT FENDER RIM WHILE USING HAMMER FOR STRAIGHTENING

method effectively extend the flat surface.

To smooth out the extreme edge an effective means will be to apply a blow-pipe to the edge alternately with the mallet, striking only the very lightest blows.

Any glaring imperfections in the hammering process may be removed by the judicious use of a small hammer or a block of wood or steel of appropriate form.

The workman having made a passable job of the work up to this stage will probably find that, while the rim may have been smoothed out to a presentable surface, on looking at it edgewise, or by taking hold of the rim at the extreme edge, the edge is not drawn tight, using the word tight in the sense of a tightly drawn wire.

It was in anticipation of the loose or stretched condition of the edge that the rim of the fender was bent and clamped with the steel bar and two clamps to a smaller radius than the normal curve of the templet for the reason that although difficult to contract, it is easy to restretch.

At this stage the steel bar and two clamps may be removed from their position on the rim.

Examining again the edge of the rim, it may be found that the removal of the steel bar and two clamps has permitted a recoil of the body of the fender towards its normal curve, with a possible tightening effect upon the edge of the rim.

In commencing the description of this fender repair it was assumed that the rim was stretched in two places—one at the curve which we have been describing and the other at the straight portion of the rim. See Fig. 3, Motor World, July 29.

The treatment of the stretched portion of the straight part of the rim may be carried out on the same general principle as has been described, bending the body of the fender to form a curve sidewise in the rim to provide the pronounced conical or mound-like surface required.

Assuming that the rim has been contracted at both places where it was stretched, that is at A and C, Fig. 3, Motor World, July 29, the fender may be applied to the templet. Here may be realized the help of the two marks or notches on the templet, which on the uninjured fender coincided with the center of the fender iron and the tail end of the fender.

Applying the partially repaired fender to the templet at least one of the notches or marks must be made to coincide until the repair is finished.

Owing to the purposely contracted position of the fender while the stretched

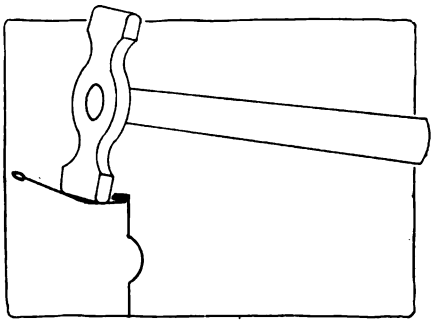


FIG. 5 — HAMMER WITH WHICH QUICKEST WORK CAN BE DONE, BUT WHICH REQUIRES THE GREATEST SKILL

portion was being contracted, it will be found that even with the release of the steel bar and two clamps the rim where curved is still of lesser radius than the curve of the templet.

Judgment must decide here just which particular point of the rim requires a little stretching to make the rim coincide exactly with the curve of the templet.

Having decided, however, that a particular portion, say, 2 or 3 inches long, is contracted too much, that portion may be heated with a blow-pipe to a very dull red and stretched.

Should the rim require restretching for the entire length of the curved portion, it should not be necessary to heat it in

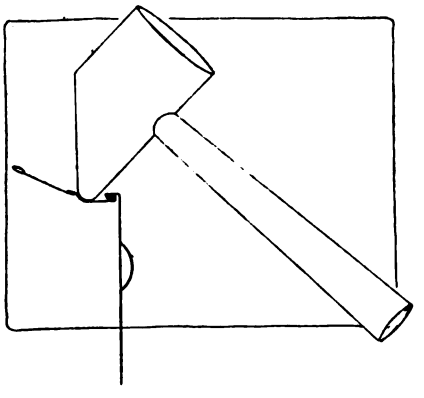


FIG. 6—SPECIAL MALLET WHICH WORKS MORE SLOWLY THAN HAMMER BUT IS SAFER IN UNSKILLED HANDS

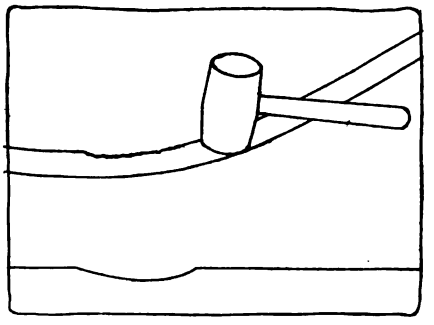


FIG. 7—AT THE POINT WHERE THE BEND IN THE RIM JOINS THE STRAIGHT PART EXTRA CARE IS NEEDED

this case. Apply pressure with both hands uniformly while slowly and gradually rolling the curved portion of the fender on the bench.

It must be realized here that to restretch the fender too much at this stage, when the work is almost finished, would mean that the work of contracting the rim would have to be commenced all over again.

Having stretched the curved portion so that it coincides with the templet, the straight portion may be treated in the same manner until the entire outline coincides with the templet, providing that the center of the fender iron and the tail end of the fender correspond with their respective marks or notches on the templet. The fender should not only have been restored to its proper contour, but the extreme edge of the rim should be free from waves or slackness and be drawn taut.

From the lengthy description the reader may assume that the repair would take an unwarranted amount of time to carry out. On the contrary, however, it is a matter of experience and observation that a skilled mechanic would easily dispose of such a repair in from half an hour to an hour.

Efficiency Survey Complete 10 Units.

The Board of Technical Detail of the American Efficiency Survey of motor car units has passed upon eight units. Of the 73 units to be tested the following ten have already been completed: Spark plugs, magnetos, tires, oil, ignition cable, jacks, hand pumps, power pumps, towline and brake lining.

Zenith Man Back From France.

V. R. Heftler, president of the Zenith Carburetor Co., Detroit, has returned from a month's trip to France. While on the continent he attended a gathering of factory heads from the different Zenith branch factories. Besides business, Heftler attended the Grand Prix race.

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The Week's Incorporations

Kalamazoo, Mich.—Safety Fire Motor Car Co.; capital $10,000.

Washington, D. C.—The Smith-Trew Motor Co.; capital $10,000.

Seattle, Wash.—Auto Specialty Co.; capital $10,000. Corporators—J. F. Hill, H. M. Kerr and L. Frank Brown.

Duluth, Minn.—Easy Wheel Auto Co.; capital $100,000. Corporators—N. J. Upham, T. F. Upham and others.

Detroit, Mich.—General Garage Co.; capital $5,000. Corporators—J. Frank and Florence D. Boydell, John C. and Bessie N. B. Wood.

Cleveland, O.—The Hudson-Stuyvesant Motor Co.; capital $25,000; to manufacture motor cars, supplies, etc. Corporators—H. M. Kodet and others.

Detroit, Mich.—Home Service Co.; capital $1,200; to deal in motor car supplies. Corporators—Roland C. Simon, Lorenz Diebel and James E. Dale.

Cleveland, O.—Windemere-Euclid Garage Co.; capital $10,000. Corporators—Carl R. Baker, C. F. Taplin, Earl H. Wells, V. M. Harris and E. M. Golding.

Newark, N. J.—New Jersey Motor Utilities Co.; capital $50,000. Corporators—John McLean, F. B. Knowlton, I. O. Wowling, all of New York, N. Y.

Detroit, Mich.—Central Oil Co.; capital $200,000; to deal in gasolene. Corporators—Roy F. Francis, Otto C. Zoller, Robert J. Morrison and Edward C. Hoffman.

Kenosha, Wis.—Kenosha Boiler & Structural Co.; capital $10,000; to make steel expansion joint for highways. Corporators—Albert H. Kleunder and others.

Detroit, Mich.—Western Gear Mfg. Co.; capital $5,000; to manufacture gears and other motor car parts. Corporators—John Saunson, Oscar Palm and Victor Palm.

Detroit, Mich.—Spranger Rim & Wheel Co.; capital $100,000; to manufacture motor car wheels and rims. Corporators—N. M. Spranger, Frank Spranger and Clara B. Dettmer.

Detroit, Mich.—Detroit Starter Co.; capital $20,000; to manufacture motor car starters and other devices. Corporators—Alonzo B. Porter, John W. Fitzgerald and F. Joseph Lamb.

Buffalo, N. Y.—Hudson-Oliver Motor Co.; capital $15,000; to deal in motor cars and car supplies. Corporators—E. G. Oliver, George B. Wesley and Charles W. Pooley, all of Buffalo.

New York, N. Y.—J. Dolton & Co., Inc.; capital $900; to repair and store cars. Corporators—Jack Dolton, Joseph C. Dolton and William N. Plein, all of 354 West 50th street, New York, N. Y.

New York, N. Y.—S. S. Garage Co., Inc.; capital $5,000. Corporators—Chas. G. Evans, 233 Broadway, John F. Staiber and Harry B. Stowell, both of 153 West 54th street, all of New York, N. Y.

Cincinnati, O.—Cincinnati Speedway Co.; capital $10,000; to build and operate a motor speedway. Corporators—W. T. Foley, F. D. Hirst, T. A. Tauwald, Jr., G. A. Ginter and A. H. Morrill.

Cleveland, O.—Cuyhoga Tire & Supply Co.; capital $10,000; to deal in tires and other automobile supplies. Corporators—Louis Abrams, M. M. Gleichman, M. B. Abrams, M. Eckstein, N B. Gordon.

Cleveland, O.—Patterson Auto Carriage Co.; capital $10,000; to deal in automobiles and accessories. Corporators—Edna May Patterson, L. M. Westropp, R. J. Moriarity, C. C. McMahon, H. C. Patterson.

Brooklyn, N. Y.—Fred S. Phinney; capital $5,000; to manufacture cars, accessories, etc. Corporators—F. S. Phinney, 100 Madison street, Brooklyn; A. N. Phinney, Brooklyn; A. S. Phinney, New York.

Cleveland, O.—General Rubber Goods Co.; capital $50,000; to deal in all kinds of rubber goods. Corporators—Griswold Wilson, L. H. Wallace, W. L. Hassenmueller, William G. Stuber, G. C. Sheidler.

Brooklyn, N. Y.—Classon Garage, Inc.; capital $3,000. Corporators—Patrick H. Mulrear, 28 Kosciusko street; Edw. H. Mulrear and Albert W. Mulrear, both of 862 Bedford avenue, all of Brooklyn, N. Y.

Brooklyn, N. Y.—Kruger Bros. & Co., Inc.; capital $4,000; to repair cars, etc. Corporators—John Kruger, 209 12th street; James C. Kruger, 365 56th street, and Jos. Kruger, 254 Prospect avenue, all of Brooklyn.

New York City, N. Y.—Vehicle-Safeguard Instrument Co.; capital $25,000; to manufacture safety devices for automobiles, etc. Corporators—Junius A. Howe, 1269 Broadway; Frieda G. Howe, Junius J. Howe.

Dover, Del.—Light House Tire Co. of New York; capital $1,000,000; to manufacture and sell motor cars, tires and accessories. Corporators—John McLaren, F. V. Knowlton, S. V. Dowling, all of New York, N. Y.

New York, N. Y.—Otto Gutzmann, Inc.; capital $12,000. Corporators—Otto R. Gutzmann and Paula Gutzmann, both of 911 Amsterdam avenue, New York, N. Y., and Martin Beickert, 1876 Broadway, New York, N. Y.

New York, N. Y.—Whitefield Motor Car Co., Inc.; capital $175,000. Corporators—Morgan J. O'Brien, 2 Rector street; Alan J. Corey, 91 William street, and Dewees Dilworth, 140 Broadway, all of New York, N. Y.

New York, N. Y.—Lighthouse Tire Co.; capital $5,000; to manufacture and deal in tires, car accessories, etc. Corporators—J. McLaren, 154 Nassau street, New York, N. Y.; F. B. Knowlton and S. V. Dowling, of New York, N. Y.

New York, N. Y.—Riebe Ball Bearing Co., Inc.; capital $20,000; to manufacture ball bearings and car accessories. Corporators—Jos Hever, 77 Essex street, Hackensack, N. J.; Emil M. Lowy and Leo L. Lowy, both of 920 Prospect avenue, New York, N. Y.

Brooklyn, N. Y.—Cooper Flexible Transmission Co., Inc.; capital $160,000; to manufacture transmission appliances for cars, etc. Corporators—Ben C. Holt, 50 Church street, New York, N. Y.; Minnie Howe and Sidney C. Yeemans, both of 221 Borden avenue, Long Island City, N. Y.

Changes in Capitalization.

Detroit, Mich.—Benham Mfg. Co., from $45,000 to $65,000.

St. Louis, Mo.—George C. Brinkman Motor Car Co., from $5,000 to $50,000.

Coming Events

* Indicates sanction by A. A. A.

Aug. 2-9, Grenoble—Automobile Club of France's six-day motorcycle and cyclecar reliability contest in French Alps.

Aug. first fortnight, Auvergne, France—L'Auto's Coupe de L'Auto 2½-liter race.

Aug. 16, Le Mans, France—Automobile Club de la Sarthe's Coupe Internationale light car race, 1 liter, 400 maximum cylinder area and 350 to 500 kilos weight.

Aug. 17, Le Mans, France—Automobile Club de la Sarthe's Grand Prize de France for 4½-liter cars.

Aug. 21-22, Elgin, Ill.—Road races under the auspices of the Chicago Automobile Club.*

Aug. 23, Auvergne, France—Coupe de l'Auto Race.

Aug. 27, Brooklands Track, England—Annual Automobile Race.

Aug., Russia—Road race; Coupe de l'Empereur; 2,000 miles.

Sept. 2-7, Hartford, Conn.—Hartford Connecticut Fair Association's annual motor car show, in Exhibition Hall.

Sept. 6-7, Brescia, Italy—Automobile Club of Italy's 4½-liter Grand Prize.

Sept. 7, Providence, R. I.—Track Racemeet under the auspices of F. E. Perkins.

Sept. 7-14, Indianapolis, Ind.—Automobile Show, Indianapolis Automobile Trade Association.

Sept. 10-15, Berlin, Germany—German 4½ liter race.

Sept. 12, Hamline, Minn.—Minnesota State Agricultural Society's track racemeet.*

Sept. 14, Milwaukee, Wis.—Track racemeet under the auspices of the State Board of Agriculture.

Sept. 18-19, Hutchinson, Kan.—Kansas City State Fair track racemeet.

Sept. 26, Brooklands Track, England—Annual Automobile Race.

Sept. 26-Oct. 6, Berlin, Germany—Annual show.

Oct. 2-3, Oklahoma City, Okla.—Oklahoma City State Fair's track racemeet.

Oct. 2-3, Trenton, N. J.—Interstate Fair's track racemeet.

Oct. 7-17, New York City—Electric Vehicle Show.

Oct. 9, Chicago, Ill.—Speedway races.

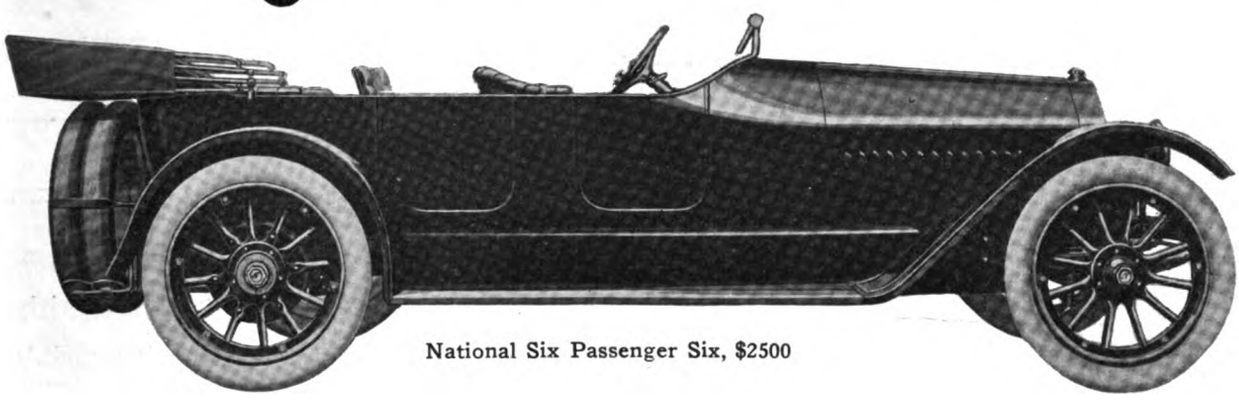
Oct. 9-Nov. 2—S. A. E. European Trip.

Oct. 16-26, Paris, France—Annual salon.

Oct. 17-24, Pittsburgh, Pa.—Automobile Show, Auto Dealers Association, Inc.

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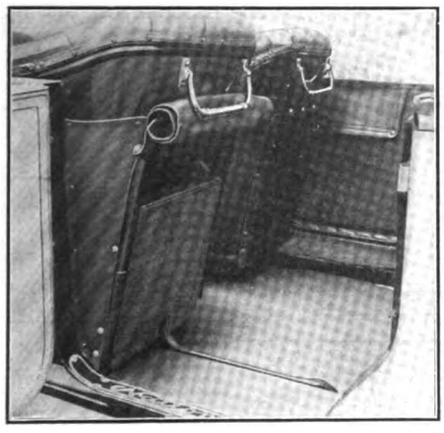
National



National Six Passenger Six, $2500

THIS new six passenger six cylinder car makes the National line complete. It is the very last word in motor car design, comfort, style, convenience and actual quality. It is a new body on the same National six cylinder chassis which mounts the popular four and five passenger bodies. The general body lines of this new car are similar to the beauty and symmetry of the famous other National Six creations. However, the body of this six passenger car is longer and larger to provide sufficient room for the additional passengers in complete comfort.

This advanced design is consistent with the National's steady and actual progress. It is another indication of the National's thoroughness and gives the National dealer additional pride in his line of cars and his factory support and enterprise. The National dealer always has the best, and has it first.

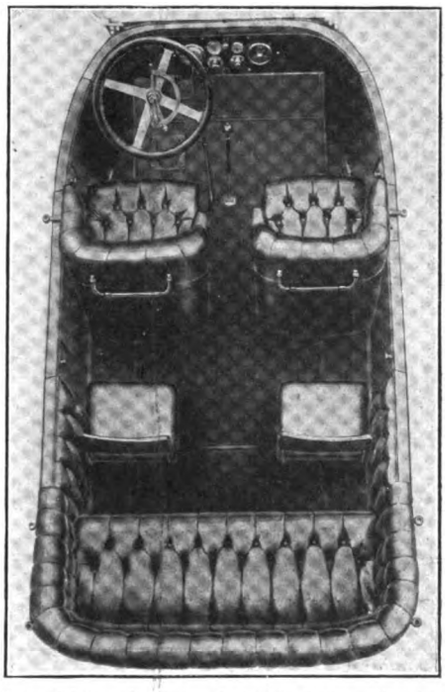


Back of Front Seat, Showing Folding Auxiliary Seats

Convenience and Comfort

On the left are the auxiliary seats folded neatly away in back of front seats. Note curtain that fastens and conceals the compartment. On right is interior of car, plan view, showing auxiliary seats firmly in position and the passage way between the two front seats. Also shows center control, left side drive, and complete and handy dash equipment.

Write for descriptive and illustrated matter on all National cars, including this Six Passenger car and the Four and Five Passenger Six Cylinder cars for $2375.



Top View of New National Body, Showing Divided Seats

NATIONAL MOTOR VEHICLE COMPANY

Indianapolis, Indiana

Builder of Stock Car Champion and American Champion

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Single Thickness Seat Cover Fabric

DISCUSSION NUMBER TWO

Laidlaw BURBANK MOTOR CLOTH

WEAR, appearance, and the fact that it can be cleaned are the three chief requirements of a perfect seat cover cloth, and these three features exist in an unqualified degree in Laidlaw Burbank Seat Cover Cloth.

Laidlaw Burbank Seat Cover Cloth is one solid piece with the wear distributed throughout, from the face right through to the back. It is closely and firmly woven. It is free from rubber compositions and can therefore be cleaned with gasoline without injury.

The usual seat cover material is made of two thin pieces of cloth cemented together with a rubber interlining composition, each cloth so thin that you can plainly see through it. The outside cloth which is expected to sustain all of the wear is usually a piece of dress goods, entirely unsuited for the severe usage and abuse to which seat covers are subjected, first, because it is harsh and wiry and therefore wears your clothing, and, second, because it is much too thin to render even a small part of the service reasonably to be expected of a seat cover, and it consequently wears through and exposes the rubber composition interlining. It is practically impossible to wear out a set of seat covers made of Laidlaw Burbank.

The superb wearing quality of Laidlaw Burbank Seat Cover Cloth is admirably supplemented by the fact that it can be cleaned with soap and water or gasoline, without injury, making it possible to always keep Laidlaw Burbank seat covers fresh and bright.

Because of the presence of rubber composition in the usual seat cover materials, it is impossible to clean them, because gasoline dissolves the rubber.

Every automobile manufacturer, dealer, body builder, and seat cover maker should know about the merits of Laidlaw Burbank Seat Cover Cloth. Full particulars and samples will be sent upon request.

The Laidlaw Company Inc.

126-32 W. 46th Street
New York N. Y.

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You can stand pat with a hand like this

There are four business cards that can't be beaten.

Bluffs and four-flushes hold no terrors for such a hand.

THE WILLARD LBA BATTERY

has played the winning hand since Electric Lighting and Starting Systems were first introduced for use on gas cars.

Imitators have played bluffs and four-flushers have quit in disgust, but the LBA continues to merit the esteem of the car manufacturer as well as the owner.

WILLARD STORAGE BATTERY CO.

Cleveland, Ohio

New York Branch: 228-230 W. 58th St.
Chicago Branch: 2241 Michigan Ave.
Detroit Branch: 736-740 Woodward Ave.
San Francisco Branch: 821 Monadnock Bldg.
Indianapolis Branch: 318 North Illinois Ave.

SERVICE STATIONS IN ALL PRINCIPAL CITIES IN THE UNITED STATES, CANADA AND MEXICO

(110)

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What Riggs Saw *in* The Jeffery Chesterfield Six

The dealer who sells a $5,000 motor car of genuine quality cannot consistently offer from the same salesroom, a car for a thousand or two which is not only light in weight, but in quality also and lacking in style, character and distinctive beauty.

The Thomas B. Jeffery Company has built a four cylinder car and a six cylinder car which the best dealers in the country can be proud to offer, because in their respective fields their standards of quality, style and beauty are fully on a par with the best foreign and American cars at any price.

That's why so many dealers selling cars known as the aristocrats of the American market, came to Kenosha this week to attend the big Dealers' conference, and went home with signed territorial contracts tucked securely in their inside pockets and a broad smile of satisfaction on their faces.

They recognize in the Jeffery line, as did Riggs, the foundation for a big successful business. In every territory in the United States the Jeffery Company wants nothing but the most successful dealer. Jeffery helps make them successful.

The Jeffery Chesterfield Six is a car designed to make its strongest appeal to people of refinement and good taste, and the Jeffery engineers have put into it that same high grade quality, style and distinctive beauty of design to which the buyers of the best foreign and American cars are accustomed.

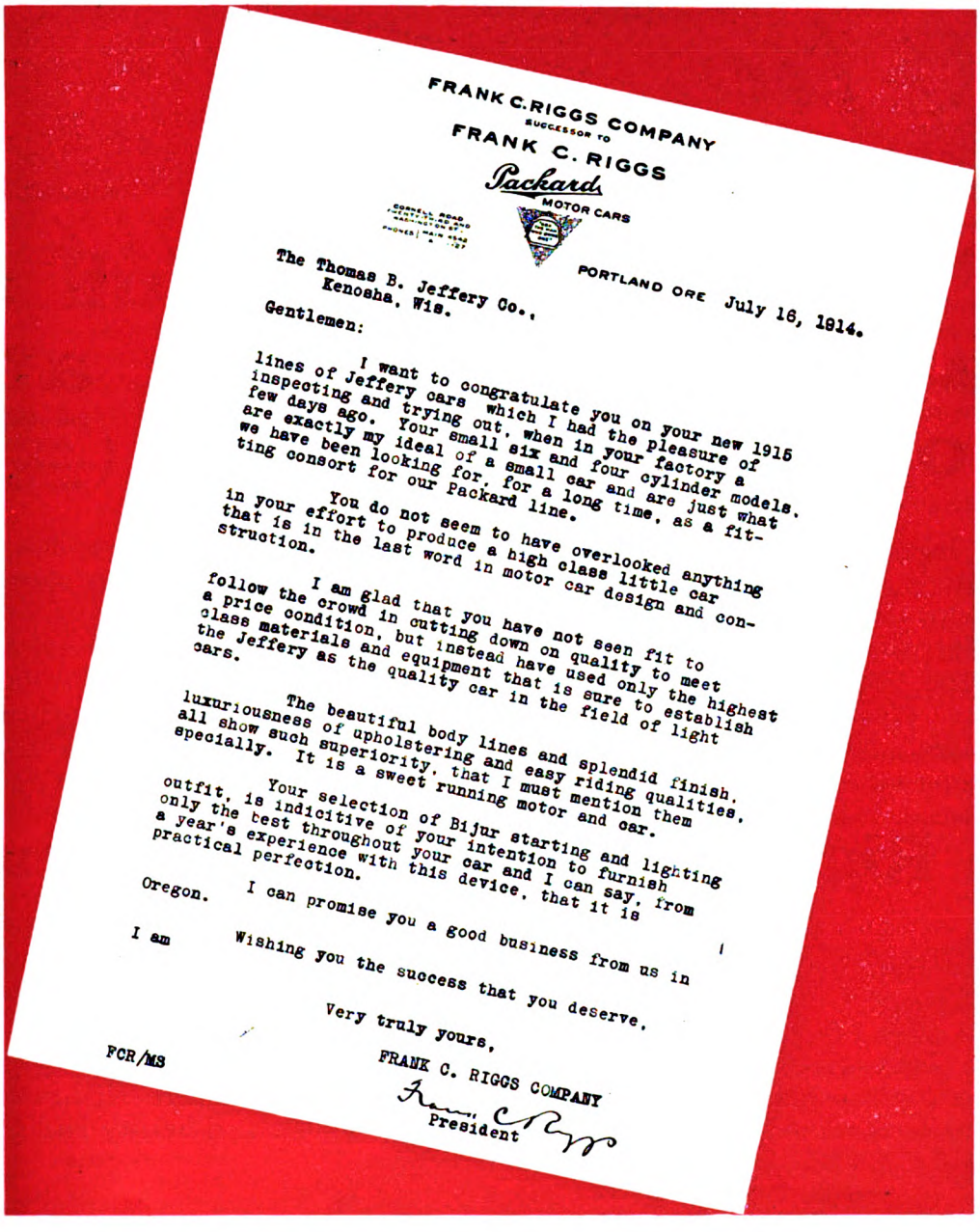
The principal features alone will make you want to know more about the complete Jeffery line, and the selling helps in Jeffery's campaign to make money for their dealers.

High speed, high efficiency, six cylinder European type motor, 35-42 H. P. Worm drive full floating rear axle, Bijur starting and lighting system (used by the Packard). Four speed and reverse transmission, Bosch ignition cables and plugs, three plate dry disc clutch, Cantilever springs, Rich tungsten steel valves, Rayfield carburetor, crowned fenders, one-man top, Chesterfield full French streamline body, 122-inch wheelbase, weight 2850 pounds.

Jeffery

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Exactly My Ideal—Just what we have been looking for—A Fitting Consort for our Packard line—The last word in Motor Car design and construction.



FRANK C. RIGGS COMPANY
SUCCESSOR TO
FRANK C. RIGGS
Packard
MOTOR CARS

PORTLAND ORE July 16, 1914.

The Thomas B. Jeffery Co.,
Kenosha, Wis.

Gentlemen:

I want to congratulate you on your new 1915 lines of Jeffery cars which I had the pleasure of inspecting and trying out, when in your factory a few days ago. Your small six and four cylinder models are exactly my ideal of a small car and are just what we have been looking for, for a long time, as a fitting consort for our Packard line.

You do not seem to have overlooked anything in your effort to produce a high class little car that is in the last word in motor car design and construction.

I am glad that you have not seen fit to follow the crowd in cutting down on quality to meet a price condition, but instead have used only the highest class materials and equipment that is sure to establish the Jeffery as the quality car in the field of light cars.

The beautiful body lines and splendid finish, luxuriousness of upholstering and easy riding qualities, all show such superiority, that I must mention them specially. It is a sweet running motor and car.

Your selection of Bijur starting and lighting outfit, is indicitive of your intention to furnish only the best throughout your car and I can say, from a year's experience with this device, that it is practical perfection.

I can promise you a good business from us in Oregon.

I am Wishing you the success that you deserve.

Very truly yours,
FRANK C. RIGGS COMPANY
President

FCR/MS

"Jeffery Motor Trucks—three quarter ton, one and a half ton—Jeffery Quad"

The Thomas B. Jeffery Company

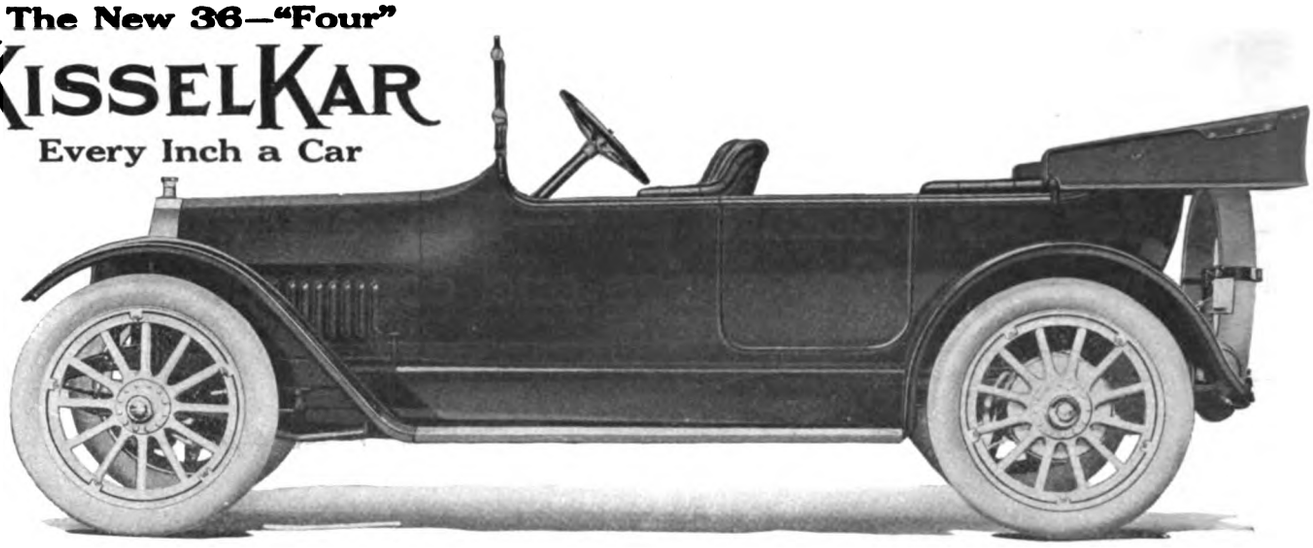
Main Office and Works, Kenosha, Wisconsin

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The New 36—"Four"

KISSELKAR

Every Inch a Car



The first high grade, full sized manufactured car at a popular price $1450 (With either 2 door or standard 4 door body.)

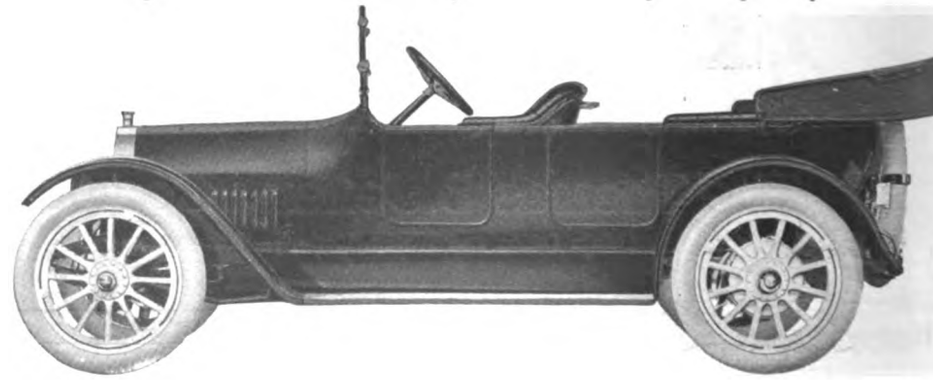
HERE it is, a fully equipped, regular sized MANUFACTURED automobile of established high grade at $1,450—**a hitherto unapproached price for a car of this class, size and specifications**—the first single compartment two-door touring car, readily converted into a closed coach for winter driving—a family carriage for **all-year** service without the expense of changing bodies. Kissel-built in every main essential in one plant, of the same high grade materials, and by the same careful methods that have justified the KisselKar eminence among upper class automobiles. Not an assembled car, mind, but a **manufactured** car that stands out as a strikingly conspicuous value when compared with others in the field selling for as much or more.

The Right Weight—a Great Engine

Every bit of unnecessary weight has been eliminated from the "36," but not an ounce taken out where it is needed for safety, strength and long service, or at the expense of comfort—for an easy riding car, one that holds the road, must have properly balanced weight. No car in America of its class can be operated more economically.

It has the best engine Kissel ever built—a powerful 4¼ x 5½ motor of great flexibility—silent, compact and capable. The riding qualities of this car are superb—it has all the conveniences—every accepted mechanical improvement. It has **style** and **beauty** and plenty of room.

Back of this great car lies the same experience, the same permanence, the same integrity, the same responsibility, the same thoroughness, the same keen regard for reputation and good will that have won for the KisselKar its enviable position in the $3,000 and $2,500 fields.



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Here is Quality and Refinement in Big Measure

ANALYZE—If you are motor-wise and will analyze and compare, you will appreciate the KisselKar "36."

CONSTRUCTION—If you know steels, workmanship and the importance of perfect balance, you will appreciate the **construction** of the KisselKar "36."

VALUE—If you have been looking for a popular priced MANUFACTURED car, built as carefully and expertly as cars of higher cost, you will appreciate the **value** of the KisselKar "36."

COMFORT—If you have sought vainly in other cars for your conception of easy riding, quiet operation and freedom from vibration, you will appreciate the **riding comfort** of the KisselKar "36."

FLEXIBILITY—If you have wished for a car that will take the hardest hills on high, and slow down to a pedestrian's pace without changing gears, you will appreciate the flexibility of the KisselKar "36."

ECONOMY—If you realize that a car to be economical must live long, depreciate slowly, be reasonably easy on tires and fuel, and be therefore of medium weight, you will appreciate the economy of the KisselKar "36."

CONVENIENCE—If you have deplored the necessity of either garaging your car during cold weather or buying a separate closed body, with the incidental expense of making a change twice a year, you will appreciate the **convenience** of the detachable top that is furnished at small additional cost, with the KisselKar "36."

BEAUTY—If you are critical and exacting in regard to appearance and refinement, you will appreciate the beauty of the KisselKar "36."

COMPLETENESS—If you demand the newest mechanical improvements, such, for instance, as springs guaranteed against center breakage, vacuum fuel feed, dimming headlights, automatic spark advance, and other up-to-the-minute innovations, you will appreciate the **completeness** of the KisselKar "36."

PRICE—The KISSELKAR 36-"Four" at $1,450 fulfills, in every respect, the full measure of value expected by far-seeing men who have prophesied that a capable and complete manufactured car of recognized upper-class would one day be offered at a much lower price.

The All-Year Car

KisselKar Detachable Top on Two-Door Body

At but slight additional cost, the KisselKar Detachable Top transforms the open car to a closed car for winter driving without the necessity of changing bodies. For $350 additional, a Detachable Top is furnished with the two-door 36-"Four" touring KisselKar, thus converting it into a perfect Sedan—the ideal family car for winter. Without the cost of two separate bodies or the expense and delay of employing a carriage maker twice a year to make the changes, the KisselKar 36-"Four" is fitted to all-year service.

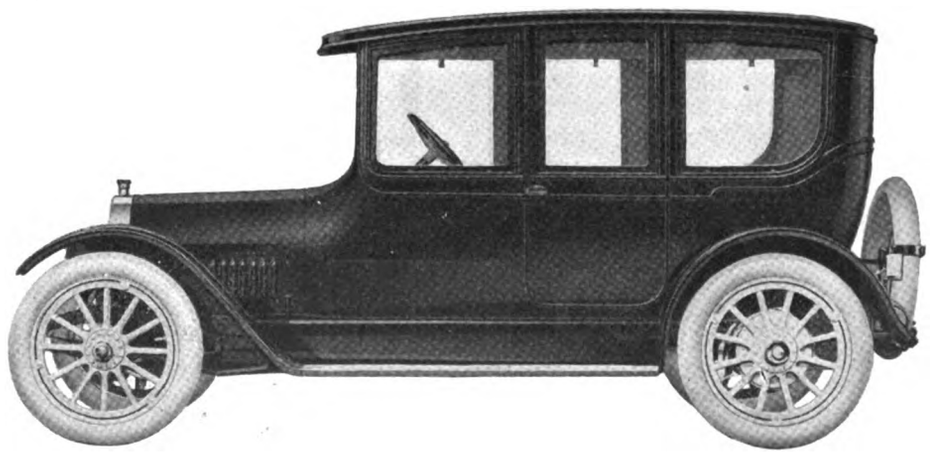


The owner, with the assistance of one other person, can attach or detach this top without the slightest trouble—no tools but a wrench and screw driver are required.

No sacrifice of any of the luxuries of the finest closed coaches has been necessary—electric dome and corner lights and every nicety of equipment is retained. Material and workmanship of the best throughout.

Small sockets, concealed beneath the trimming of the touring body and top, meet at six points and are fastened together with bolts. Dowel plates attached to the upper doors are screwed to the lower doors. Electric wiring is automatically connected as the top and lower bodies meet. Hinges are concealed—ventilation is perfect.

Would you think of expending from $1,500 to $1,800 for an automobile without taking advantage of this opportunity to secure a car that will meet all your requirements for open driving in summer, and that can be quickly turned into an elegant closed Sedan for use during the winter months? KisselKar distributors at leading points are now prepared to show you the 36-"Four"—also the new 48-"Six" with the two-door body and detachable top or Standard four-door—and the 60-"Six," America's leading big, popular priced "Six."



See a dealer or write for descriptive and illustrated portfolio

KISSEL MOTOR CAR CO., 159 Kissel Avenue, HARTFORD, WISCONSIN

BOSTON, NEW YORK, CHICAGO, MILWAUKEE, KANSAS CITY, MINNEAPOLIS, ST. PAUL, DALLAS, SAN FRANCISCO, LOS ANGELES, OAKLAND, Philadelphia, Salt Lake City, Detroit, St. Louis, Houston, El Paso, New Orleans, Washington, Baltimore, Nashville, Duluth, Buffalo, Pittsburgh, Hartford, Conn.; New Haven, Albany, Troy, Rochester, Providence, Marshalltown, Ia.; Omaha, Hastings, Neb.; Madison, Montreal, Quebec, Toronto, Winnipeg, Calgary and 300 other principal points throughout America.

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How much it costs you to sell each car next season depends upon the car you handle

The Moline-Knight sells everywhere

What you want is a car that will sell—sell right in *your* territory and at a profit to you.

During the coming twelve months cars are going to be sold more and more on their actual service value—the tendency towards this is more marked right now than ever before.

So lay aside any prejudice, personal likes or dislikes—look the situation squarely in the face—make up your mind to handle a car next season that will sell itself every time on a demonstration.

This we claim for the Moline-Knight. We realize that the burden of the proof is on our shoulders—and we stand ready to prove to you every claim that we make for the Moline-Knight.

All we ask from you as a dealer is a fair, unpredjudiced hearing—then you are to decide.

The Moline-Knight has without a single exception made good for both the dealer and the user—and in Europe today Knight-motored cars stand supreme—where it is known as "The Car of Royalty."

No bottom to price cutting

Up to a certain point the makers of the cars will stand the brunt of the price cutting war that is now raging—but even they have their limit.

When the car maker's limit is reached, it's up to you Mr. Dealer to sacrifice your profits and in some instance to pocket a loss—or tie up your money in cars that you cannot move.

There are going to be a lot of cars sold next season—some of them regardless of profit—on others the price will be maintained and the dealer will make his legitimate profit.

Because the Moline-Knight is a Knight-motored car and naturally does not come in sharp competition with the poppet valved cars—because it has few competitors in its price range—because it sells to men of means who will readily pay for value received—the Moline-Knight will be a satisfactory money maker for you to sell.

With its exclusive sales arguments—a car of class and distinction—the Moline-Knight is well worth your most serious consideration before you make your next contract.

More Power

$2400

Power
without Noise



More Flexibility

$2400

Speed
without Jolt

Digitized by Google

You will make the most money by selling the car with the least price and quality competition

Sales helps that help sell cars

The Knight Motor is no longer considered an experiment in this country—it has come to stay and must be reckoned with.

As a Moline-Knight dealer you will not only be backed up by a sales creating advertising campaign in the best national publications, but liberal arrangement will be made in regard to your local newspaper advertising, circularizing your prospects and furnishing you with suitable, attractive, descriptive literature.

In the matter of deliveries, too, you will be amply protected.

Get our plan in detail—learn just how we propose to make the agency for the Moline-Knight profitable for you.

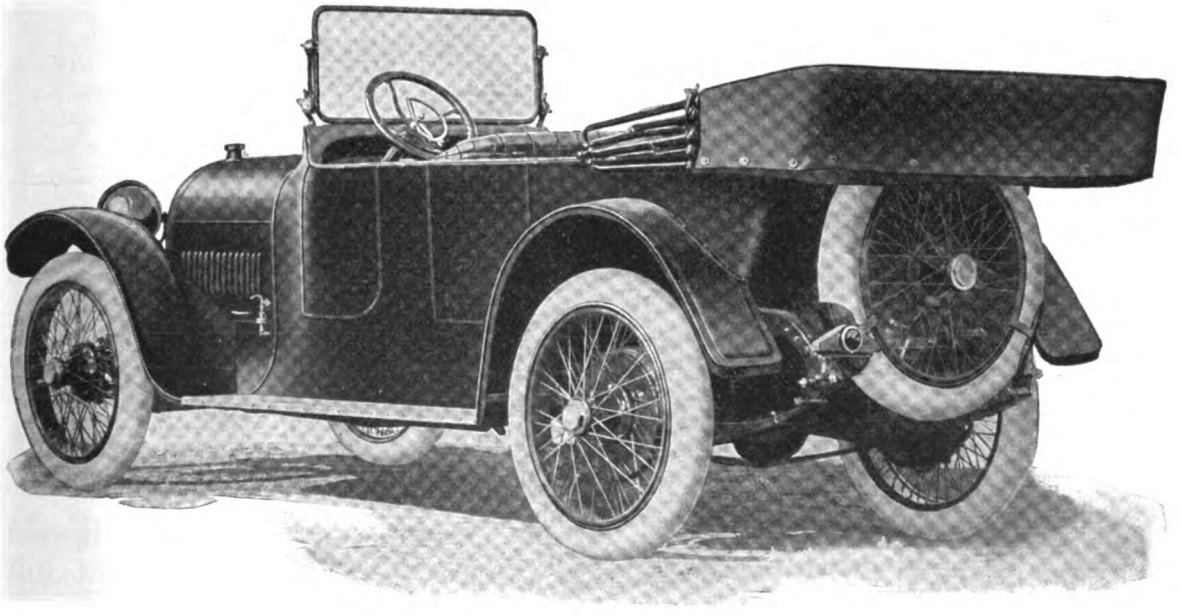
Write today for prices and terms

The streamline body with its distinctive foreign air, the ample room and luxurious upholstery, the powerful, noiseless Knight Motor of extreme flexibility — all combine to make the Moline-Knight a car that appeals to even the most fastidious buyer who demands power, endurance, economy and quality.

In the Moline-Knight you get the world's greatest motor—the motor that smashed all records for power and endurance before the Automobile Club of America.

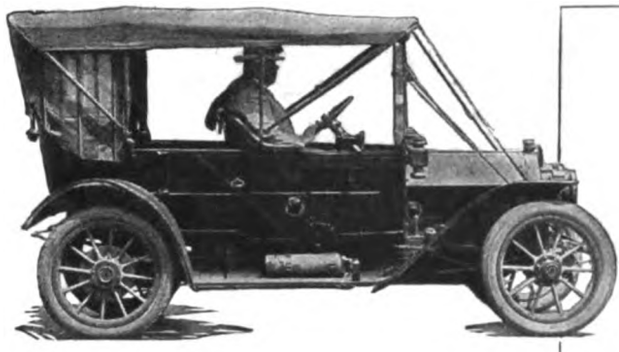
Get our proposition—write today. In asking for our plan, prices and terms you obligate yourself in no way. Act now—let us hear from you by return mail.

Moline Automobile Company, East Moline, Ill.



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"The Easiest Riding Car In The World"



OFFICE OF
THOS A WYNNE VICE PRESIDENT
INDIANAPOLIS LIGHT & HEAT CO

July 14th, 1914.

Nordyke Marmon Company,
City.

Gentlemen:-

The Marmon car which I purchased in 1909 has been driven over 100,000 miles. The set of tires which were on the car when I bought it together with two extra were used continuously for 22,000 miles. I thought this was a record for tire service but upon inquiry among other Marmon owners I found it was not unusual.

The car has given me the utmost satisfaction and is in excellent condition. I am using it every day.

Very truly,
Thos A. Wynne

Where do you get YOUR Profit?

Many a good dealer has discovered the difference between selling cars and making money.

Doesn't the sale of some cars impose an obligation instead of a profit — a liability rather than an asset?

Profit camps right by the dealer whose customers are satisfied.

Wherever you find a lot of "kicks" and "howls" from owners—you'll find a dealer who is losing money.

And when you get right down to basic facts it's a matter of the car itself.

Marmon cars make permanent profits.

Not only does the dealer escape the big "free service" drain on his bank account but—every car sold leads to other sales and further profit.

It goes on making friends and making new openings for added sales.

There's a Marmon buyer waiting in your town now!

Wherever there are big men whose position in life entitles them to demand the best—right there you'll find a man who wants a Marmon.

We will be glad to show any good dealer how he can take advantage of such an opportunity for profit.

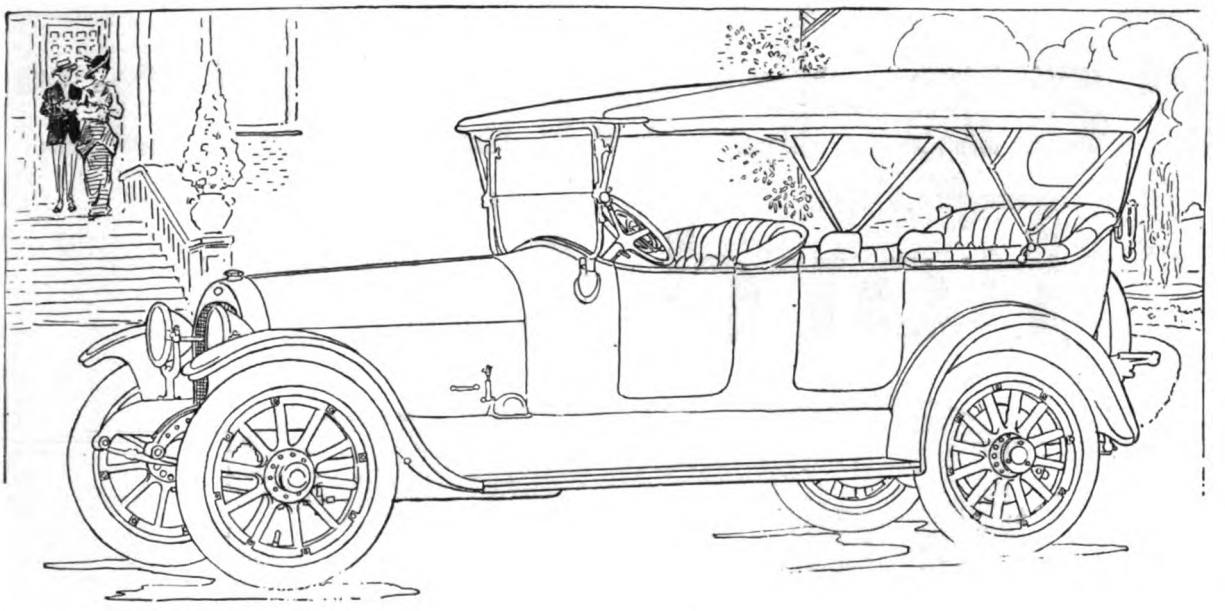
The new Marmon merchandising plan is broad enough to let you share its profits.

Better take the next five minutes and spend it in asking us about it by this mail. You can't make a better investment of your time.

"Over Sixty Years of Successful Manufacturing"

Digitized by Google

"The Easiest Riding Car In The World"



Extraordinary Proof of an Extraordinary Car

A few weeks ago we announced the new Marmon "41" Medium Six.

We told you what our engineers pronounced it—"The finest car we have ever produced."

Here's what an engineer whose word is regarded as authority wherever automobiles are made has to say of this extraordinary car after driving it a thousand miles:

"On Saturday, June 6th, I left Buffalo at 9 o'clock in the morning, driving the new 1915 model '41' through by way of Albany to within six miles of Pittsfield, Mass., and from there straight over to Hudson and from Hudson to Red Hook, arriving there at 9:15 P. M. Distance covered 416 miles at an average for the entire distance of almost 35 miles per hour. How is this for road touring?

"On the road between Buffalo and Batavia I tried the car out for high speed for the first time and found it was possible to attain a speed of approximately 62 miles per hour, with the top and windshield up. Also as near as I can determine the car throttles down to about 2½ miles per hour on high gear with the spark fully retarded.

"The economy was very good. On the day I drove the 416 miles I averaged 12 miles to the gallon for the entire distance, which I think is an exceptionally fine showing for the high average for this long distance."

We can't say anything stronger than this.

If you want to know why—if you seek the reasons for real value in a car—let us send you the "41" details and open the way for you to know more about this new Marmon.

Just say—"Send the '41' details—NOW!"

Marmon "41"—132" wheel base—$3250
Marmon "48"—145" wheel base—$5000

Detailed information on request

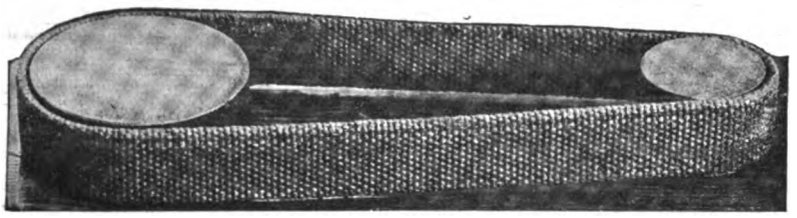
Nordyke & Marmon Company

Indianapolis (Established 1851) **Indiana**

"Over Sixty Years of Successful Manufacturing"

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Fan Belts For Ford Cars



WHEN the GILMER FAN BELT is put on an engine it immediately ***becomes a part of the engine***—doing its work with the same regularity and constancy as any other part of the engine, adjustment or attention.

First orders are secured on looks and reputation.

The reason why the Dealer has no trouble in selling repeat orders of Gilmer Fan Belts is because they never require adjustment or attention.

The GILMER BELT is neat and attractive in appearance. Is ***woven endless*** and is, therefore, of a ***uniform thickness, strength and durability, running without jump or vibration.*** It is furnished as Factory Equipment by the majority of the leading Car Manufacturers.

Every Dealer who handles Ford or other Automobile Accessories should carry these belts in stock—they require no selling effort, take up very little space in shelves and give a ***large percentage of profit.***

To any Dealer who will show his interest by sending 5c. for postage, we will send a free sample FORD FAN BELT.

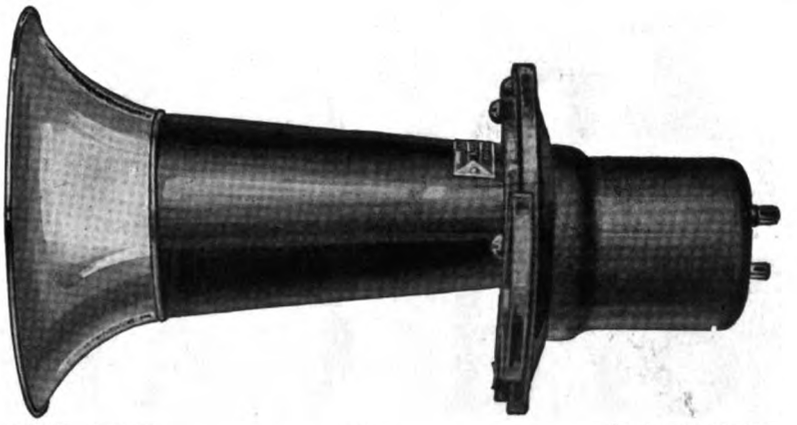
Descriptive Folders and Prices on Fan Belts and other Lines sent on request.

Accessory Department

L. H. GILMER COMPANY

52 North 7th Street **Philadelphia, Pa.**

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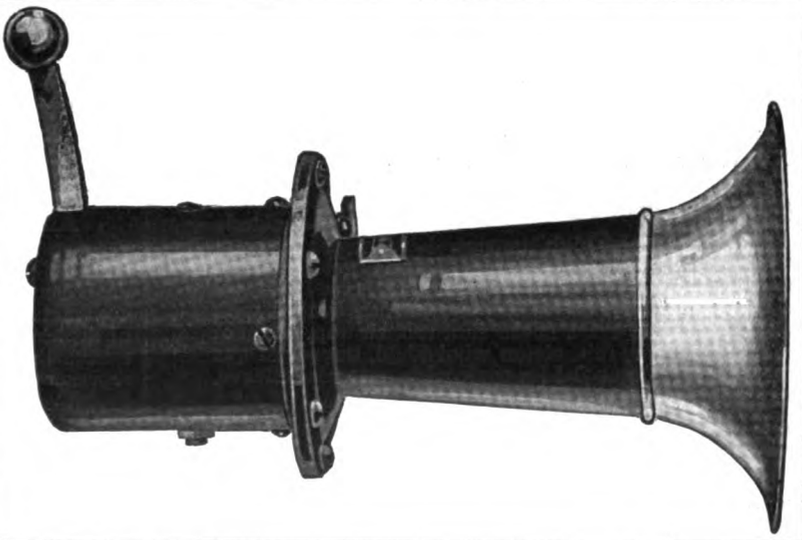
$9.50 to $15.00

SPARTON

Electric Motor Driven and Hand Operated Signal

The motorist cannot afford to depend on a good enough warning signal. When the time comes for action, he must have a horn that will compel quick, unthinking, instantaneous jumping—such is the discordant, action-compelling growl of the SPARTON when the button is pushed home. On country stretches a good pressure on the button produces a warning clarion that can be heard a mile down the road, giving everyone time to get out of the way. On city streets a light touch produces an inoffensive, but authoritative command, warning people at close range.

Hand Operated $7.00 and $8.00



Hand Operated $7.00 and $8.00

The Sparks-Withington Co., Jackson, Mich.

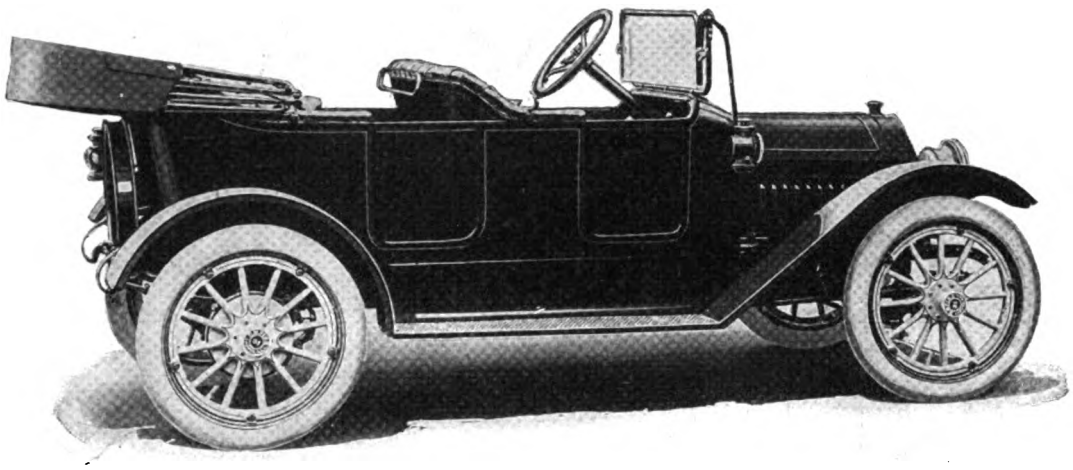
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EMPIRE

"The Little Aristocrat"

1

Delive
AUGU



The Same Famous Empire Quality—Now $50.00 Less

$850

A great big, roomy, five-passenger touring car at a price lower than any car of equal size, power and sturdiness. This is what we offer you in the EMPIRE Model 31, at $850 for the 1915 season. At such a price the EMPIRE 31 looms up as the great car value of the new season. It is a car that will meet every demand for comfort, efficiency, economy and safety—a car that you can drive day in and day out with unfailing satisfaction.

For, in the EMPIRE 31, you have a thoroughly tried car, proved by five years' service in the hands of owners, the test which means most to you. These years of splendid performance in all parts of the world bear convincing evidence of EMPIRE worth, for the same Quality Chassis has been used, without a single change in a basic principle of construction. But each season there have been added minor refinements, conveniences and improvements, giving an ever better car. Thus, a one standard chassis policy with our annual increased capacity allows us to offer at $850 a car more refined, better in many ways, than we could market two years ago at $975. We could not better the car so we give you the benefit of a lower price, a price at which the EMPIRE 31 still remains the Aristocrat of the $1,000 class.

The EMPIRE is made with exacting care. Not one superfluous part, yet complete to the last essential detail. A proof of its ruggedness is the EMPIRE'S mighty performance in the Indiana-Pacific tour—because of its light weight, surplus strength and power, the EMPIRE negotiated hundreds of miles of rough road in a manner that made it the sensation of the tour. A car that can go through such a test without mechanical adjustment merits your consideration either as a car to buy or a car to sell.

What follows tells the story: Unit power plant, high speed 3¾ x 4½ motor, disc clutch, selective sliding gear transmission, high tension Eisemann magneto, Weston-Mott front and rear axles, irreversible steering gear, 17-inch steering wheel, center control, thermo-cyphon cooling, constant-level force-feed lubrication, Holley model H carburetor, 12-inch brakes with equalizers, demountable rims with extra spare rim, mohair top, topboot and curtains, Stewart speedometer, rain vision windshield, improved gas headlights, side and tail lamps, Prest-O-Lite tank with enameled sleeve, robe and foot rails, tire holders, tools, etc.

Study the EMPIRE

The EMPIRE 31 is the kind of car for the kind of buyer who wants a car of medium size, but of appearance and superlative quality—who insists on these, but has placed his limit, whether from necessity or from sound sense, at $1,000 or less. If you are a dealer you'll realize the advisability of writing at once for our liberal proposition for 1915.

ABOUT TERRITORY

Another annual increase in production for the 1915 season will enable us to enter into selling contracts with a greater number of dealers than ever before. This means that the EMPIRE will be represented in territory now open. Possibly you are in a district where new representation is desired. If you are in the field for such an attractive line as the 1915 EMPIRE, on a liberal co-operative basis, write, telegraph or come to Indianapolis today. We will give you full details.

Empire Automobile Company, Indianapolis, U. S. A.

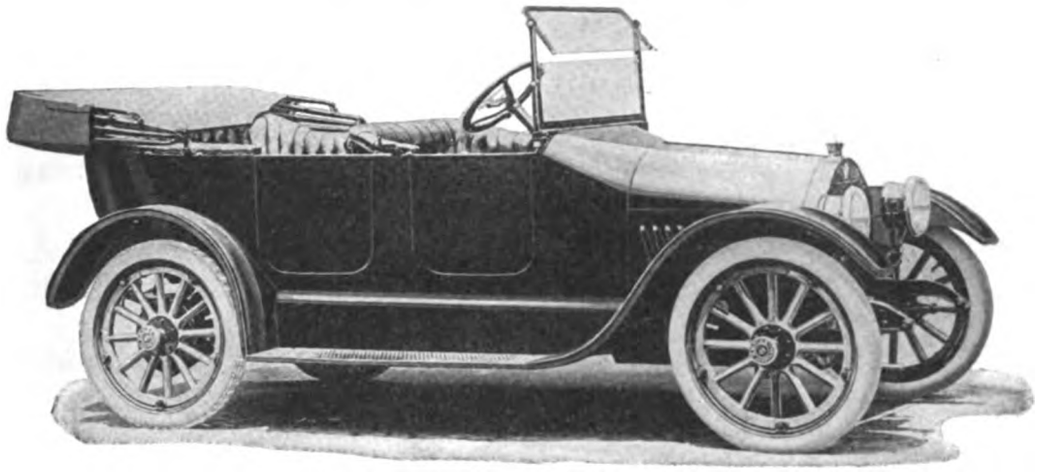
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5

Begin
RST

EMPIRE

"The Little Aristocrat"



Electric Starting and Lighting—Streamline Body

$975

For the first time in automobile history you can buy a full five-passenger touring car of EMPIRE QUALITY and SIZE with beautiful streamline body and electric starting and lighting for less than $1,000—the EMPIRE 31-40 at $975. At first sight the EMPIRE 31-40 grips you, and the regard in which you hold it will constantly grow. The streamline body, built to conform with the latest dictates of motor car design, is one of rare beauty.

From radiator to the full limousine roll back, there is not a break in lines, not a door hinge protruding. The extra wide, low-set seats, roomy driving compartment and tonneau, assure full carrying capacity with maximum comfort. The rich Turkish upholstery of especially selected leather bespeaks a car of much higher price. Thus, you have the smart body designs and ideas that characterize leading European cars. With them are coupled all the convenience and equipment features of American practice, including positive electric starting and lighting, making possible every operating control from the driver's seat.

On the opposite page we have given fuller information in regard to mechanical construction of our one standard chassis which is the foundation of all EMPIRE cars. The welding of this excellence with handsome design makes the EMPIRE 31-40, the car you must buy if you would have a car of quality and every newest convenience at the price that you feel you should pay. For the new EMPIRE 31-40, as it stands today, is the last word, the best word, in automobiles for user or dealer. Our faith in this statement is borne out by the fact that on every EMPIRE car, including all electrical equipment, we give one year's guarantee, while the usual manufacturers' warranty is for only ninety days.

THE EMPIRE ROADSTER

New standards of beauty, comfort and convenience are established by the EMPIRE roadster. It is the classiest, nattiest, sturdiest two-passenger car you ever saw. It is the 1915 masterpiece. Exceptional luggage carrying space, deep, comfortable seats with plenty of leg room, gasoline tank in cowl, etc., makes it the ideal touring roadster. With electric starting and lighting this popular model lists at **$975.** The same car with complete standard equipment is **$875.**

Striking features of Model 31-40: Streamline flush side body, special high body finish, full limousine back, extra wide and deep seats; big, roomy, comfort for five people; invisible door hinges, selected leather, Turkish upholstery, full U-doors, 21 inches wide; non-skid tires on rear, all instruments on sheltered cowl board, crown fenders of special design, single post, rain vision, ventilating windshield; Remy guaranteed electric starting, electric horn under hood, electric headlight dimmers for city driving, oversize storage battery, armored wiring, license irons, twin spare tire carriers on rear, 14½ gallon gasoline tank (1½ gallon reserve), mohair simplified top, topboot and curtains, Stewart speedometer, carburetor adjustment on dash.

Our Latest Booklet

You can immediately on sight appreciate the value offered in these new 1915 EMPIRE models. Comparison with other cars of like price, or indeed several hundred dollars more, will convince you of the superlative quality that enters into every feature of EMPIRE construction. These points are more fully brought out in our new descriptive booklet. A post card will bring this book by return mail.

Empire Automobile Company, Indianapolis, U. S. A.

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The New Studebaker Automobiles

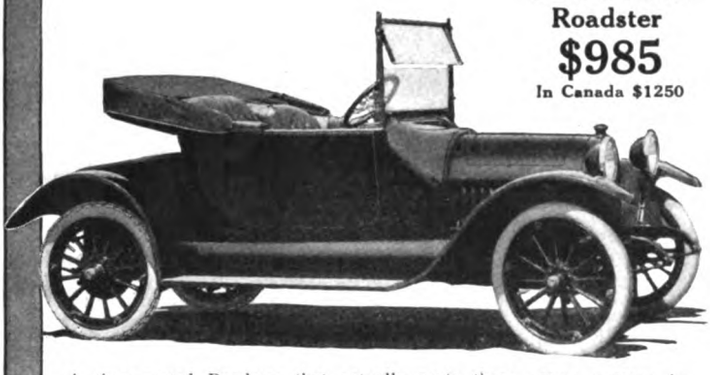
The NEW SIX
5-Passenger
$1385
In Canada $1750

7-Passenger $1450
In Canada $1825



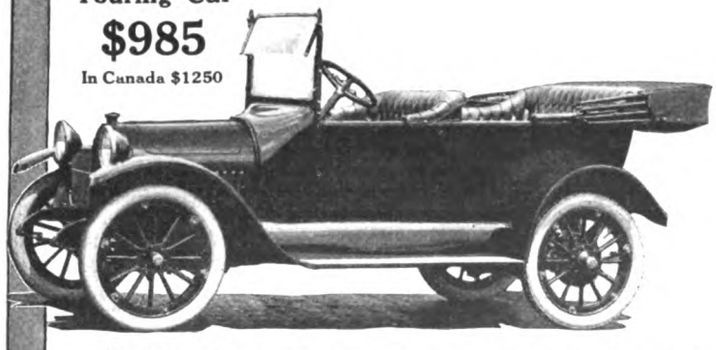
Powerful, silent, small bore, long stroke motor, 3½ x 5 inches; 150 pounds lighter; 15 x 2½ inch brakes; 34 x 4 inch Goodrich tires on Q. D. demountable rims, Safety Tread on rear; more room in front and rear; one-man type top; full-floating rear axle; full equipment of Timken bearings; 24 finishing operations; wheelbase 121 inches.

New FOUR Roadster
$985
In Canada $1250



A three-seated Roadster that actually seats three grown persons in perfect comfort. Driver's seat set slightly forward. Special top. Baggage compartment at rear, etc. Same general specifications as FOUR Touring Car.

New FOUR Touring Car
$985
In Canada $1250



Powerful, silent motor, 3½ x 5 inches, small bore, long stroke; crowned fenders; special dimming headlights; 100 pounds lighter; 12 x 2¼ inch brakes; generous room; 33 x 4 inch Goodrich tires on Q. D. demountable rims, Safety Tread on rear; one-man type top; full-floating rear axle; full equipment of Timken bearings; 24 finishing operations.

STUDEBAKER dealers, everywhere, are of the progressive, prosperous and permanent type of business men.

They enjoy steady business day in and day out, year in and year out.

They are not in the motor car business today and some other line of business tomorrow.

They know motor car values and the ins-and-outs of the business.

That is why they are Studebaker dealers.

Studebaker cars are manufactured practically complete in Studebaker plants.

The Studebaker organization is, we believe, the most efficient unit in the entire motor car industry.

Its co-operation with Studebaker dealers along the line of sales, of service and of advertising is broader in its scope and more helpful in character than is the co-operation enjoyed by any other class of dealers.

That is why Studebaker Dealers are invariably successful dealers.

That is why Studebaker territory is at a premium.

That is why there is in many parts of the country an actual waiting list of responsible dealers anxious to secure Studebaker representation.

Many divisions and subdivisions of territory are being made in various parts of the country, making a few very desirable openings for responsible dealer connections.

Dealers visiting Detroit are cordially invited to inspect the Studebaker plants and investigate Studebaker manufacturing and sales methods.

STUDEBAKER, Detroit

"Quantity Production of Quality Cars"

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Seven Solid Reasons for Using Gurney Bearings

What are the facts behind the Gurney success?

Distinctive features of Gurney Ball Bearings.

1. **Unique Design.** Full Type, No Filling Slots, Full Depth of Raceways.
2. **Thrust Capacity** that puts them in a class by themselves, in Radle-Thrust Bearings up to 100 per cent.
3. **Single piece,** Jointless Separator, permitting the maximum number of the maximum size of balls.
4. **Raceways** ground to the contour proved and admitted to be the most efficient, and always so ground.
5. **Rings** ground to a degree of concentricity unapproached by any other make.
6. **Made** to a degree of accuracy unequalled by any others.
7. **Uniformity.** Every ring that goes through our factory is not only produced by processes that give it these distinctive characteristics, but is subjected to drastic tests, to the most minute and rigid inspection, which none but the perfect can pass. If it were not for our wonderful processes of production we could not afford to subject our products to the hardships of testing and inspecting they have to undergo. The latter is made commercially possible by the former. For these reasons our bearings have, as perhaps the most important of all, this quality of uniformity.

GURNEY

Gurney Ball Bearing Company

Jamestown, N. Y.

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Country driving even at moderate speeds over ordinary roads is very hard on the bearings of your car.

The jolts, twisting and road shocks that a car gets are carried to the bearings of the axles and transmission.

Hyatt Quiet Bearings, by cushioning road shocks, absorbing vibrations and keeping gears and shafts in alignment, relieve the surrounding mechanism of undue strains.

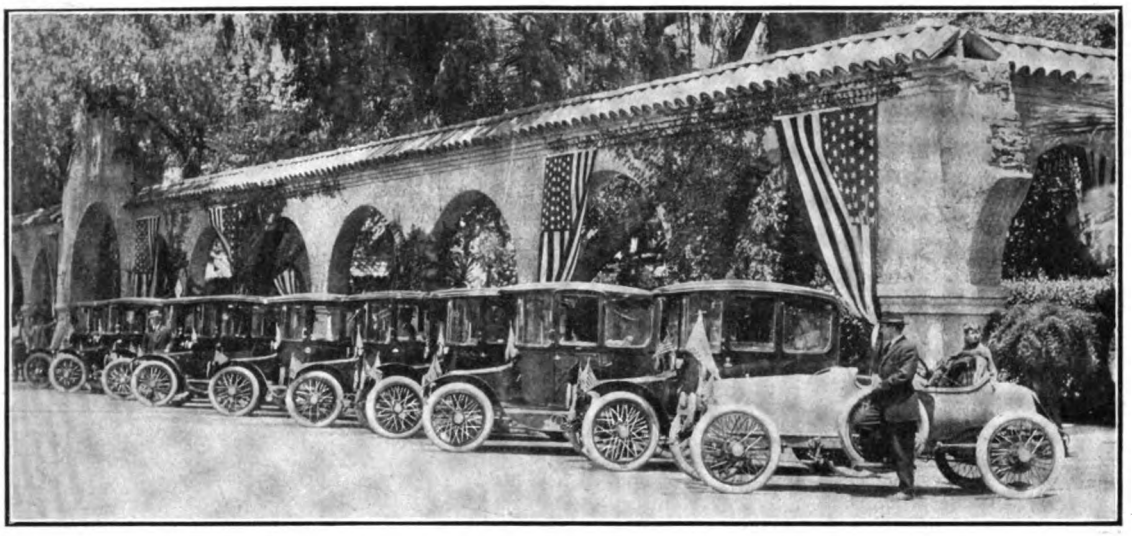
Two books, one about motor car bearings in general for prospective purchasers, the other for automobile owners, will be sent on request.

"Hyatt Quiet Bearings"

HYATT ROLLER BEARING CO.
DETROIT, CHICAGO
NEWARK, N.J.

HY-ELEX-ROL
TRADE MARK REGISTERED U.S. PATENT OFFICE 1913

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Houk Wire Wheels on Beardsley Electric Cars in front of famous Mission Inn, Riverside, Cal.

Note the Houk Wire Wheels

Every day more cars are to be seen equipped with Houk Wire Wheels. Fleets of Houk-equipped cars like that illustrated above are by no means rare.

The development of the wire wheel has been the big thing of the year. In another year or two a car without wire wheels will be as antiquated as a car without a self starter.

Don't buy a car that in a short time will be out of date and consequently will not have its proper value. Insist on the leaders

HOUK

Detachable

Wire Wheels

Made in Sizes to Fit all Cars

Manufactured by the World's Largest Wire Wheel Makers, Houk Mfg. Co. for Geo. W. Houk Co., 1703 Elmwood Ave., Buffalo, N. Y.

USE THIS COUPON

Geo. W. Houk Co.
1703 Elmwood Ave.
Buffalo, N. Y.:—

Without obligation on my part send me catalogue and prices on Houk Wire Wheels for a

.....car.

Model.....Rim size.....

Name .....

Address .....

.....

Digitized by Google

Mosler Vesuvius Plugs



Have no equals for speed and power.

Made to fit any engine, any thread.

Stone Insulation is practically unbreakable.

Unique method of assembly renders Vesuvius Plugs absolutely gas tight and insures perfect adjustment of sparking points.

A.R. MOSLER & Co.
NEW YORK N.Y.

199-R

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POWERFUL INDESTRUCTIBLE AND SURE

Powerful because of faultless design.

Indestructible because of the finest materials.

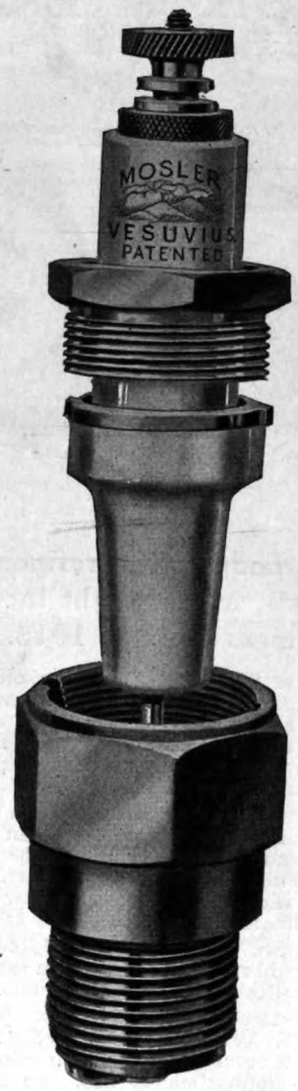
Sure because of methods and workmanship employed in manufacture.

EXCLUSIVE FEATURE

Note ears on collar.

The only plug that has means for assembly without rotating the insulator.

Washer and ears take up all friction of the nut and give the direct straight pressure which makes the plug absolutely gas tight.



Collar takes up friction of nut.

Collar cannot turn when nut is tightened because ears on collar fit into slots in shell.

0631

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1915 Chalmers Cars

"Sixes" Exclusively



"Light Six" 5-Passenger $1850

New body styles, refinements of detail, continued use of the well-tried Chalmers chassis, and a slight increase in price. These are the striking features of the Chalmers line for 1915.

The Chalmers "Light Six" is now offered in both five and six-passenger types with new bodies of latest style and design—in every way a distinguished car. The five-passenger model is a big, roomy car in comparison with high powered "Sixes," but not skimped in design.

The six-passenger model—at $1900—is a car of exceptional grace and roominess, with an entirely new, luxurious and distinctive body. The tonneau is fitted with Pullman disappearing seats. Doors are unusually wide. The body is a new type of exclusive Chalmers design.

This "Light Six" is the proved 1915 car. 3600 of these cars have been driven an aggregate of 3,000,000 miles and they have universally made good.

When we first announced this car we priced the five-passenger car at $1800. We have since added a few detailed improvements and made some changes which have increased the manufacturing cost approximately $50. So beginning August 1st the price of the five-passenger model became $1850. At the new price our factory profit remains the same.

Quality First

The 4-passenger Torpedo is a most distinctive car. It has exclusive style and dash. The beautiful new body has a single door on either side. Front seats are divided, the doors being in the center of the body.

This is a man's car of universal style and smartness, built lower than usual, giving it a foreign, racy appearance and making it distinctive among other cars.

The "Master Six" 7-passenger Touring Car is a big, roomy car, for those who drive an automobile of maximum carrying capacity. The lines of the 7-passenger body are the same as those of the Torpedo.

The "Master Six" of Them All

The new 1915 Chalmers "Master Six"—$2400—will be produced in limited quantities for those who seek the fullest luxury of power and size in a motor car.

For 1915 the "Master Six" is offered in two body types, the 4-passenger Torpedo and the 7-passenger Touring Car. Both types are unusually beautiful and distinctive. The price of either type is $2400.



"Master Six," Torpedo $2400

Chalmers Cars—Quality Cars

"Quality First" will continue to be the guiding principle of Chalmers manufacture for the coming season. It is to carry out this principle even further than in the past that we have raised the Chalmers prices.

The Chalmers Company is not competing and never has competed with other cars on a "price" basis. Our past experience has shown us that each year there are enough people to whom "quality" is first and "price" secondary to buy more Chalmers cars than we can make.

So the Chalmers Company is one of those sure enough of its market to continue to produce cars on a "quality" basis rather than on a "price" basis. The new prices, $1850 for the Chalmers "Light Six" and $2400 for the "Master Six," mean no more profit per car to us, but they mean to you even more value in the future than in the past.

See These Cars

Arrange with your local dealer to see these Chalmers "Sixes." Take a ride in the car that appeals to you most. Place your order early. The production of Chalmers "Master Sixes" is limited and will not fill the demand.

"Light Six" 7-Passenger Touring Car $1900
"Light Six" 7-Passenger Limousine . 3300
"Light Six" 5-Passenger Sedan . 2850

Chalmers Motor Company, Detroit

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Prest-O-Lite

The Sure Cure for Lighting Troubles



NOW is the time to change

You don't have to fool along with unsatisfactory light.

You don't have to leave your car in the repair shop—pay for continuous "service" or wait for an "expert" to search for mysterious troubles.

Get Safe, Saving, Satisfactory Prest-O-Lite

Follow the example of thousands of other wise motorists. Tell your dealer to take out all the experimental, complicated, delicate, unsatisfactory system and go back to Prest-O-Lite.

Did you ever hear of the same electric lighting system being used on the same make of car for more than a year?

Prest-O-Lite saves weight, gives greater engine power, never fails suddenly, is free from trouble and repairs, needs practically no attention.

Your gas lights may be lit, dimmed or extinguished, from the seat, by the use of the Prest-O-Liter.

No matter what self-starter is on your car, your headlights should be gas lights. Reliable light is just as essential as fuel.

Use the Coupon

If you want the facts on all lighting systems, showing how you can save time, money and trouble on YOUR car—use the coupon today.

The Prest-O-Lite Co., Inc.

287 Speedway, Indianapolis, Ind.

(*Contributor to Lincoln Highway*)

Exchange Agencies Everywhere

(210)

The Prest-O-Lite Co., Inc.,

287 Speedway, Indianapolis, Ind.

Please send me complete information on automobile lighting.

.....

.....

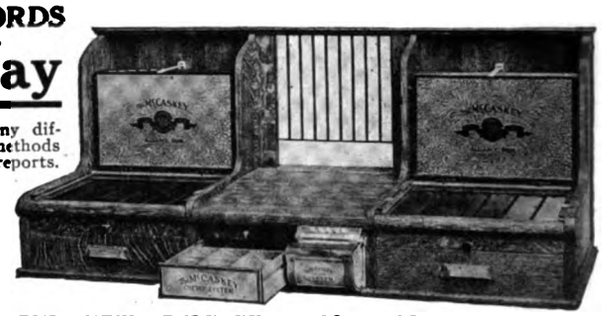
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HANDLE YOUR ACCOUNTS AND RECORDS

The New and Easy Way



In the past eleven years more than 100,000 merchants in many different leading lines of business discarded the old bookkeeping methods and installed the **NEW** and **EASY WAY** of handling accounts and reports.

The following is a list in part of some of the different lines:

Gen'l Merchant	*Provision*	*Dairy*	*Garage*
Hardware	*Laundry*	*Tailoring*	*Book Store*
Drug	*Contractor (Time*	*Confectioner*	*Electric Goods*
Commissary	*and Stock Keeping)*	*Plumber*	*Flour and Grist*
Dry Goods	*Coal, Ice and Transfer*	*Shoe*	*Mill*
Lumber	*Jeweler*	*Music*	*Wall Paper and*
Furniture	*Manufacturer (Stock Keeping & Inventory)*		*Paint*

With Only One Writing **The McCASKEY SYSTEM** The End of Drudgery

First and still the best!

is the **NEW** and **EASY WAY** and can be fitted to your business, large or small.

THIS NEW STYLE EXPANSION REGISTER

contains a minimum of 220 regular accounts and can be expanded to a maximum of 860 regular accounts. Expansion possibilities 640 accounts. Built and finished to suit your business.

Let us explain what the McCASKEY SYSTEM will do for you. The information we can give will be worth real money.

Don't delay, but write to **THE McCASKEY REGISTER CO., Alliance, Ohio**

BRANCHES: New York, Chicago, Boston, Minneapolis, Washington, Pittsburgh, Memphis, Atlanta, Kansas City, San Francisco, Cincinnati; Dominion Register Company, Ltd., Toronto, Canada; Manchester, England.

The largest manufacturers of carbon coated salesbooks in the world



New Departure Ball Bearings



A Fair Question Deserves a Fair Reply

In designing your next car, the question of bearing equipment will, of course, receive the serious consideration so important a question deserves.

In all fairness, New Departure ball bearings more than answer that question.

It is a bearing of guaranteed quality including high grade materials, accuracy of finish, and uniformity of dimension. It is the product of an American factory with ample capacity for prompt and complete deliveries without liability of troublesome delays such as are sometimes experienced by manufacturers who buy their bearings abroad.

Why not give New Departures a thorough tryout?

A line from you will bring our literature and representative. May we send either or both and inform you fully of our proposition?

The New Departure Manufacturing Co., Bristol, Conn.

Western Branch, 1016-17 Ford Building, Detroit, Mich.

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MAXWELL MOTOR SALES CORPORATION

AUTOMOBILES

WOODWARD AND WARREN AVENUES

EXECUTIVE AND SALES OFFICE

DETROIT, MICH

Cable Address "MAXCO"
WESTERN UNION LIEBERS and A.B.C. 5TH EDITION CODES.

June
26th
1914.

THE NEW 1915 MAXWELL "25."

EXTREMELY IMPORTANT TO DEALERS IN AUTOMOBILES.

Between July 15th and August 1st we shall announce,- place upon display and exhibit our new 1915 Maxwell "25," to retail at $750.

We shall begin the distribution throughout the country of this new 1915 "25" model by August 1st.

We confidently expect to be able to build 60,000 of these new 1915 "25" models retailing at $750. within one year.

We shall do all that human endeavor and our immense factory facilities can do to build at least 60,000.

I confidently predict that this new Maxwell "25" retailing at $750. will be the greatest sensation that the automobile world has ever known.

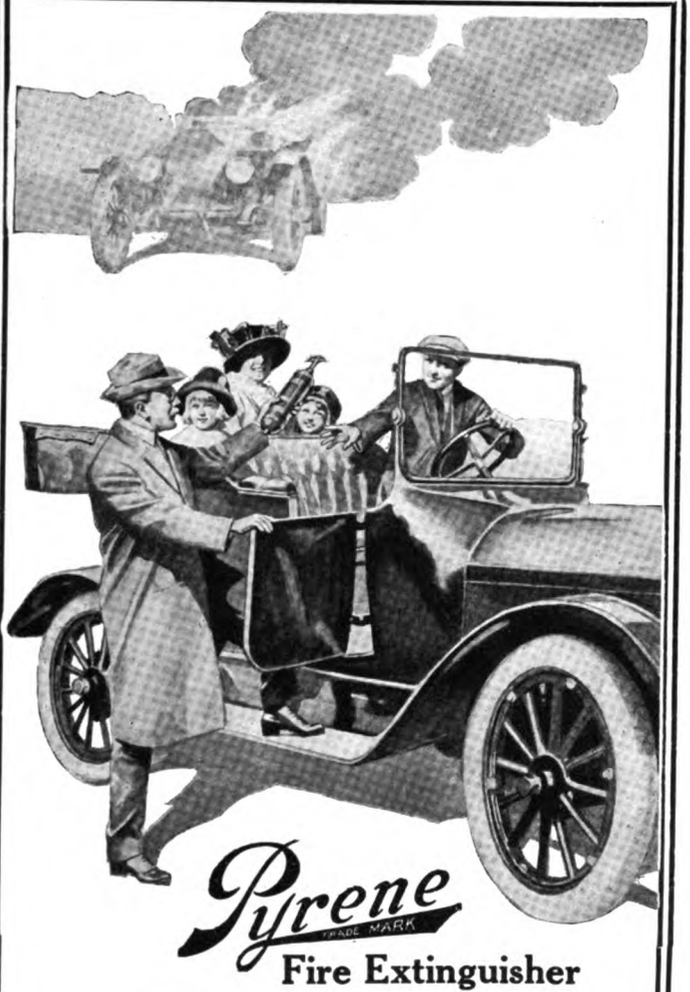
I base this prediction upon the car from the ground up - its chassis; its motor; the lines and size of its body; and the unexpected extra and additional features which will be placed upon this car.

Walter E. Flanders.

President,

Maxwell Motor Co., Inc.

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Pyrene
TRADE MARK
Fire Extinguisher

15% Reduction
In Your
Insurance Premium
and PROTECTION

From the Dangers and Annoyances of Fires on the Road if Your Car is Pyrene-Equipped

¶ Your new car will be Pyrene-equipped at the factory if you demand it.

All leading Insurance Companies allow 15% reduction on the Fire Insurance Premiums of Pyrene-equipped motor cars, which reduction was originated by The Aetna Accident and Liability Co. and The Automobile Insurance Co. of Hartford, Conn.

Collisions happen and the overturning of an auto is not infrequent and fires follow, threatening the lives of passengers unable to extricate themselves. The Pyrene Fire extinguisher accessibly located may be the means of saving the lives of your companions.

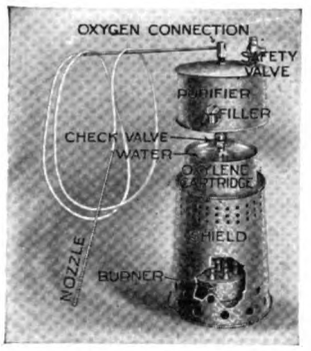
Ask that your new car be Pyrene-equipped at the factory.

AT ALL FIRST CLASS SUPPLY DEALERS

Brass and Nickel-Plated Pyrene Fire Extinguishers are the only one-quart Fire extinguishers included in the lists of Approved Fire Appliances issued by the National Board of Fire Underwriters.

Pyrene Manufacturing Co., 1358 Broadway, New York
OFFICES IN ALL PRINCIPAL CITIES

OXYGEN GENERATOR COMPLETE And One Oxylene Cartridge $10



Cheapest and Best Way to Remove Carbon—No Taking Down, No Scraping, Indestructible Generator.

Oxylene Cartridges at These Low Quantity Prices:

1 Oxygen Generator (when sold separately) - - - - $9.50
1 Oxylene Cartridge boxed 7 lbs - - - - - - - - - 1.50

1 Oxygen Generator and 1 Oxylene Cartridge $10.00

8 Oxylene Cartridges---1 case 50 lbs. at $1.12 1-2 - - $9.00
16 Oxylene Cartridges---2 cases 100 lbs. at $1.00 - - 16.00

One Oxylene Cartridge Cleans 4 Cylinders. Free Booklet tells how. Figure Your Profit at 300 per cent. Order today.

A Big Thing for Live Agents

The Oxygen Decarbonizer Co.
6 Fourteenth Street, Detroit, Mich.



"WHITNEY" KEYS FOR FORD CARS

In order to supply the demand for "Whitney" Keys for Ford cars we are now prepared to furnish a box containing 12 keys especially assorted for these cars.

Each box contains a circular describing each key, giving size and where used. Every garage and repairman should have a box of these keys on hand. They cost little and are very convenient.

THE WHITNEY MFG. CO.
HARTFORD, CONN.

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The Owners of

Sanford

Motor Trucks

have tried them out under all climatic conditions; on country roads, in the extreme hilly sections of our country and the Far East, with always the same result:

Efficient, accessible, reliable, sturdy, well built, up to date TRUCKS.

THE SANFORD MOTOR TRUCK COMPANY
W. Fayette Street, Syracuse, N. Y., U. S. A.

EXPORT DEPARTMENT
Room 233, 17 Battery Place New York City, U. S. A.

1 ton Chassis and Driver's Seat $1660



1½ ton Chassis and Driver's Seat $1910



Mail this coupon for our proposition, Mr. Dealer

Shrewd dealers everywhere are supplying the ever-increasing demand of high-grade motorists for this famous tire.

That's because Republics are QUALITY tires. Republics cost more because we put extra mileage into them; the motorist gladly pays more because he gets extra mileage out of them.

Write for the full facts. Let us tell you in detail why Republic Tires will make the best people in your town your customers; why they will stay sold and make repeat orders certain; why, in short, you can build up the biggest and best tire business in your locality with this tire.

Clip out and mail the coupon today—find out.

The Republic Rubber Co.
YOUNGSTOWN, OHIO

Branches and Agencies in all the Principal Cities

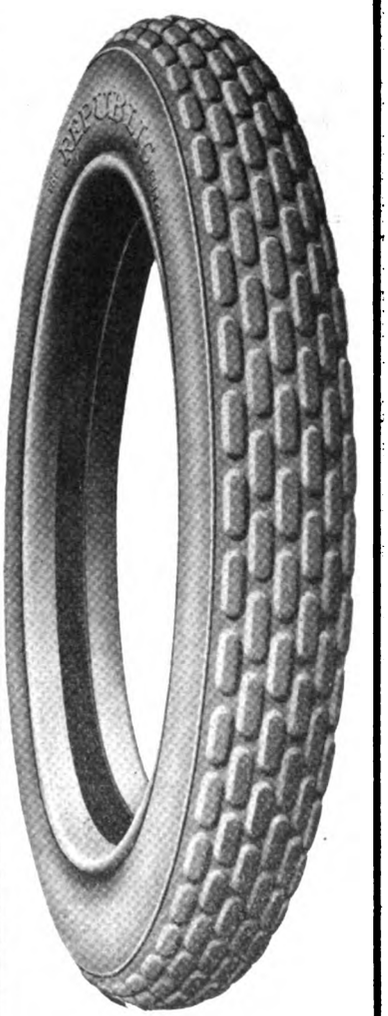
REPUBLIC MILEAGE
PLAIN AND STAGGARD TREAD
TIRES



Here is the baby of the Republic Family. He's a quality tire, too, made in three sizes, designed especially for small cars. Here are his specifications

Prices :
30 X 3 $13.50
30 X 3 1-2 18 00
32 X 3 1-2 19.50

Republic W M Tread Tires



Republic Staggard Tread
Pat. Sept. 15-22, 1908

Look to your Tires

YOU can take a *thousand miles of service* out of a set of tires by driving them insufficiently inflated over *ten miles of road.*

The New Positive Lock Stop Twitchell Air Gauge

Insures you against premature wearing out of tires.

It is TIRE INSURANCE FOR ONE DOLLAR



For Sale by Jobbers, Dealers, Garages or

The Twitchell Gauge Company
1202 Michigan Avenue CHICAGO

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Two to One

that this fellow doesn't do work like this next year. He'll buy a Kellogg Pump or he'll buy a new car that has a Kellogg as standard or special equipment. This list shows his choice.



Chandler	Imperial	Peerless
Fiat	Jackson	Speedwell
Franklin	Lexington	Stearns
Havers	Lozier	Stevens-Duryea
Howard	Mitchell	Winton
	Packard	

Or he'll buy one of these cars because he can get a Kellogg with special attachments that any dealer can install.

Abbott	Henderson	Pierce
Buick	Hudson	Reo
Cadillac	Maxwell 6	Simplex
Chalmers	Oakland	Studebaker Six
Cole	Overland	Stutz

There are many other cars for which we have made attachments and for which we are building special pumps.

Engine Driven KELLOGG Air Pump

ONE, TWO, FOUR, SIX-CYLINDER MODELS

One of the great advantages of the Kellogg Pump on your car is due to the fact that we have been making pumps with **special attachments** for so many years now that we know just what problems we have to contend with in every type of car for which we build equipment. Over 56,000 of our four-cylinder pumps, for example, have been sold within the past six years. Lift up the hood of most any of the cars named above and you will find that the pump makes a neat attachment.

"Fit Companion of Any Good Motor"

We have kept ahead of present day practice in that we have designed different styles of pumps for different requirements, just as we have built different attachments that our pump might be most efficient under all circumstances.

Write us about your requirements

Kellogg Manufacturing Co.

112 Circle Street, Rochester, N. Y.

NEW YORK SAN FRANCISCO DETROIT CHICAGO

Special Pumps and Air-Starting Units Made in Quantity for Manufacturers

D & C LINE LINES

"Two GIANTS of the Great Lakes"

Str. City of Detroit III.
Str. City of Cleveland III.



Operating Between Detroit and Buffalo

The Delights of a Lake Trip

REST after work is necessary to human endurance, and holidays are a wise economy. The Great Lakes of America offer more vacation opportunities than any other source in the country. The steamers of the Detroit and Cleveland Navigation Company, operating to all important ports, are unrivalled in point of elegance, comfort and quality of service—the perfect freedom offered by the saloon and promenade decks, the commodious state rooms, luxurious furnishings and excellence of cuisine make life aboard these floating palaces a solace to the weary mind and body.

Where You Can Go

Daily service is operated between Detroit and Buffalo, Detroit and Cleveland; four trips weekly between Toledo, Detroit and Mackinac Island, the historic summer resort of the North Country; and from June 25 to Sept. 10 a special steamer, two trips weekly, will be in commission between Cleveland and Mackinac Island, stopping only at Detroit every trip. During July and August special daylight trips between Detroit and Cleveland. From June 10 to Sept. 10—daily service between Toledo and Put-In-Bay.

Railroad Tickets Available

Tickets reading via any rail line between Detroit and Buffalo, Detroit and Cleveland will be honored for transportation on D. & C. Line Steamers in either direction. Send 2 cent stamp for illustrated pamphlet and Great Lakes Map. Address L. G. Lewis, G. P. A., Detroit, Mich.

Detroit & Cleveland Navigation Co.

Philip H. McMillan, Pres. A. A. Schantz, Vice-Pres. and Gen. Mgr.
General Offices, Detroit, Mich.
Steamers arrive and depart from Third Avenue Wharf, Detroit.

EISEMANN



The performance of Eisemann Ignition Systems during the Indiana-Pacific Tour justifies every claim we have ever made for Eisemann efficiency and dependability.

The Eisemann Magneto Company

Sales and General Offices
32 33rd St., Brooklyn, N. Y.

New York 123 W. 52d St. | Indianapolis, Ind. 514 North Capitol Ave | Detroit, Mich. 802 Woodward Ave.

Booth FELT

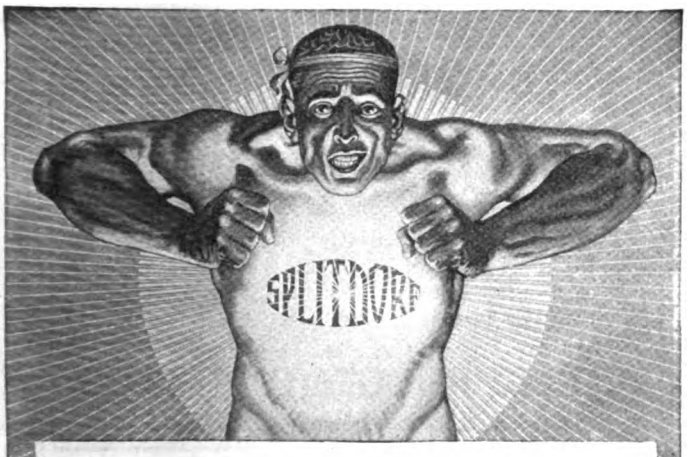
TRADE MARK

Washers, Gaskets, Packings and Felt Goods are specified by engineers of all the leading American high grade cars.

N. E. BOOTH

624-644 Pacific Street Brooklyn, N. Y.

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SPLITDORF PLUGS are the standard of PLUGDOM.

All sizes—for all cylinders—for all purposes.

Insist upon SPLITDORF—it's necessary.

SPLITDORF ELECTRICAL COMPANY

ATLANTA	10-12 E. Harris St.	LOS ANGELES	1215 S. Hope St.
BOSTON, St Germain & Mass. Ave.		MINNEAPOLIS	34 S. 8th St.
CHICAGO	64-72 E. 14th St.	NEWARK	290 Halsey St.
CINCINNATI	811 Race St.	NEW YORK	18-20 W. 63d St.
DALLAS	402 S. Ervay St.	PHILADELPHIA,	210-212 N.13th St.
DAYTON	427 E. 3d St.	SAN FRANCISCO	1028 Geary St.
DETROIT	972 Woodward Ave.	SEATTLE	1628 Broadway
KANSAS CITY	1827 Grand Ave.	TORONTO	469 Yonge St.
LONDON		BUENOS AIRES	

CONNECTICUT AUTOMATIC IGNITION

Gives every advantage of ideal ignition with none of the magneto's shortcomings. Ask for Booklet.



CONNECTICUT TELEPHONE & ELECTRIC CO., Inc.
MERIDEN, CONN.

DEALERS who are looking for a real opportunity to build a substantial, permanent business will find the 4-page advertisement of Century Electric Car Co. which appeared in Motor World, June 24, full of practical suggestiveness.

We have an *unusual* electric—and yet there is nothing freakish or radical—and, now is the time to write.

CENTURY ELECTRIC CAR CO., Detroit, Mich.



Edison Mazda Lamp Service Stations

"Service" is behind the EDISON Lamp. Service in operation and service in obtaining the lamps.

For the convenience of car owners EDISON MAZDA Automobile Lamp Supply stations are now established all over the country. At these Supply stations the motorist may obtain renewals—the right kind of lamp that will give the most efficient and satisfactory service with the lighting system on the car.

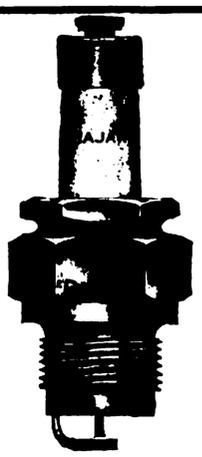
EDISON MAZDA *Automobile Lamps*

may be obtained wherever an EDISON MAZDA service station or agency sign is seen. It is the progressive dealer, supply house or garage that displays this sign. Right there you will obtain other standardized accessories that will give you maximum service and satisfaction. Nearly every car owner when putting in new bulbs insists on EDISON MAZDAS. They are backed by MAZDA Service.

Ask for what you want by name. "Be sure the lamps you buy bear the name EDISON."

EDISON LAMP WORKS
OF GENERAL ELECTRIC COMPANY
General Sales Office Harrison, New Jersey.

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RAJAH
GIANT PLUG

For pleasure car, motor-boat or truck.

Porcelain and metal parts large and strong.

Extremely simple construction for cleaning — only four parts — shell, porcelain, bushing and gasket.

With proper care, GIANT Plugs can be used for years.

Rajah Auto Supply Co., Bloomfield, N. J.

A NEW SERIES AND A NEW PRICE

1915 Model PREMIER $2385

Stream line body, left side drive, center control, unit power plant, three point suspension, electric lights and starter, one man top, clear running boards. New price $400 lower.

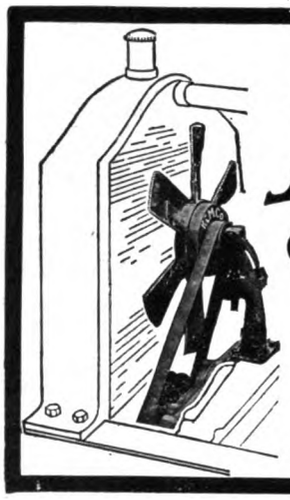
PREMIER MOTOR MFG.CO.
INDIANAPOLIS.

Inter-State

We have a money making proposition for every live dealer in the country.

It will pay *you* to investigate it *now*.

Inter-State Motor Company
Dept. B **MUNCIE, IND.**



THE
Kemco
FAN TYPE
GENERATOR

Makes Good
DEALERS

We still have unassigned territory —our proposition allows you good profit. Write today if you are a hustler. (21)

The Kemco Electric Mfg. Co.
CLEVELAND, OHIO

New and Rebuilt Electrics at Low Prices

We have on hand 150 new and rebuilt chain- and shaft-driven electric vehicles, which we will sacrifice at prices that will enable you to reap very large profits. The new cars are perfect in every particular; the rebuilt cars are all in first-class condition, richly finished and completely overhauled — new tires and new batteries. All cars guaranteed for one year. WRITE TODAY for prices and illustrations.

Buffalo Electric Vehicle Company
Main Street, Buffalo, N. Y.

IF YOU ARE INTERESTED IN

MOTORCYCLES

THE BICYCLING WORLD AND MOTORCYCLE REVIEW

WILL INTEREST YOU

PUBLISHED EVERY TUESDAY AT
231-241 WEST 39th ST., NEW YORK

TWO DOLLARS PER YEAR
SPECIMEN COPIES GRATIS

Ford

Model T Runabout	$500
Model T Touring Car	550
Model T Town Car	750

With Full Equipment, f.o.b. Detroit

FORD MOTOR COMPANY
Detroit, Michigan

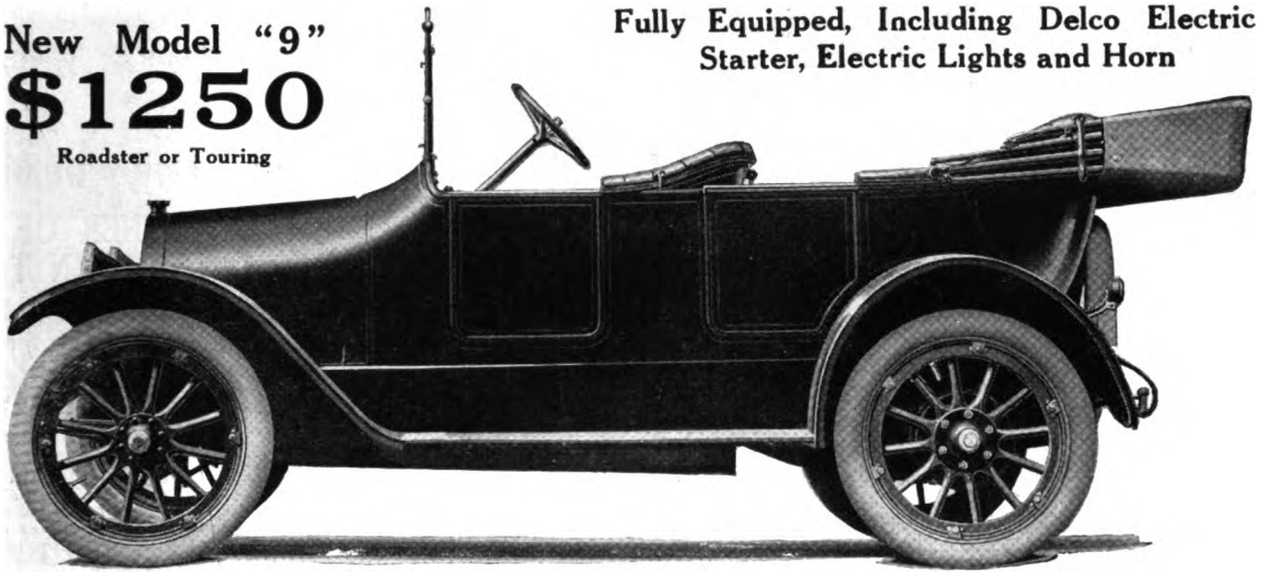
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Cartercar

Gearless Transmission Triumph

New Model "9"
$1250
Roadster or Touring

Fully Equipped, Including Delco Electric Starter, Electric Lights and Horn



The New Cartercar and the New Cartercar Policy

WITH the advent of the new season, August 1st, 1914, the manufacturers of the gearless transmission Cartercars announce that their policy will be to concentrate all the energy of their present efficient organization on the production of but one model chassis and this on the embodiment of all the distinguishing features of the other Cartercars—yet better than any of them.

The Success Behind the Gearless Transmission

This Cartercar transmission consists of a flat copper disk revolved by the engine and a fibre faced wheel. They grip when rolled together, the edge of the wheel against the face of the disk and the result is transmission by friction instead of cogs.

For twelve years this form of transmission has earned the confidence of its makers and the public. It has proven itself equal to the emergencies and most satisfying under adverse conditions.

Model Nine has all the sturdy qualities of the gearless transmission combined with the added attractiveness of neat lines and complete equipment.

Beauty and Comfort

The cowl dash meets with perfect symmetry the tapered hood. The stream-line effect, the deep cushions, the big tires, the extra roomy body, all add touches of grace and ease.

Model 9 Features

The Gearless Transmission.
Trim Stream-line Body.
Colors—Raven Blue or Cartercar Gray.
Delco Electric Starter.
Electric Lights and Horn.
Economical, extra powered motor.
Big Tires (33 x 4 ins.), Rear tires, non-skid type.
Genuine Leather Upholstery.
Double Deck Seat Springs.
Dimming Searchlights.
New Instrument Board with all controls, fuel gauges, etc., in plain sight.
Horn Button on Wheel.
New Two Way Ventilating Rain Vision Windshield.
Extra safe brakes.
Mohair Top, New 'Inside' curtains.
License Tag Holders.
Extra Demountable Rim.

Write for Folder Describing Model 9.
A Card Will Bring It

40% Better Performance

The motor is a marvel of power and economy.

The bore is 3½ inches and the stroke 5 inches; with the resultant increase in pulling power and the decrease in the consumption of fuel. The head is detachable, making access easy when necessary.

The gear ratio of Model "9" is 4 to 1, which makes the New Cartercar fully 40% better in performance on low as well as on high speeds. Backed by the flexibility and powerful leverage of the gearless transmission it has a strength unsurpassed by any other car of any price.

The Biggest Value

If we did not confine our output to this one model chassis and at the same time greatly increase the production, we could not possibly sell this splendid Cartercar for $1250. It is the biggest value ever offered in our twelve years' experience.

Cartercar Company, Pontiac, Michigan

Branches in: Chicago Detroit Kansas City Atlanta

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Coxajusto
ADJUSTABLE TO ANY LOAD



The shock absorbers that have made good on heavy and light cars alike. The adjustment feature found only on Coxajustos is the reason for their superiority. A simple twist of the wrist adjusts them to the load. There is a model especially for the Ford.

Send for Folder Today. Address Dept. P
COX BRASS MFG. CO.
Established 1872 ALBANY, N. Y.
1777 Broadway, New York City. 3637 Michigan Ave., Chicago, Ill. 890 Boylston St., Boston, Mass. 870 Woodward Ave., Detroit, Mich. 1316 Van Ness Ave., San Francisco, Cal. Export Representative, Auto Supplies Export Co., 1779 Broadway, New York City.

THE Detroit ELECTRIC
SOCIETY'S TOWN CAR

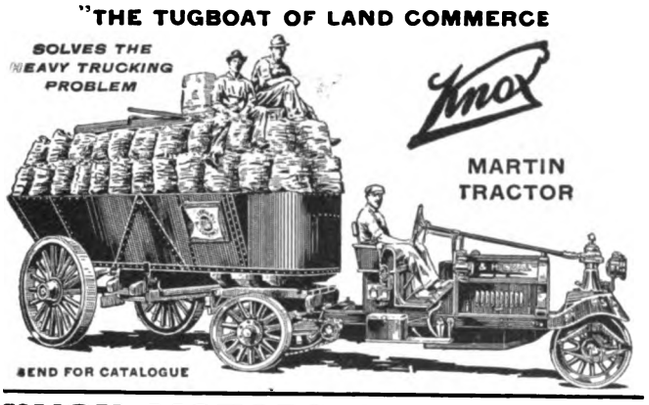
Every Third Electric Built and Sold is a Detroit Electric

Prices

With Bevel Gear Axle		*With Worm Gear Axle*	
4-passenger Brougham Rear seat drive	$2550	Gentleman's Roadster	$2500
5-passenger Brougham Front seat drive	2800	4-passenger Brougham Rear seat drive	2850
		5-passenger Brougham Detroit Duplex Drive	3000

Anderson Electric Car Company, Detroit, Mich.
Builders of the Detroit Electric
World's Largest Manufacturers of Electric Pleasure Vehicles

"THE TUGBOAT OF LAND COMMERCE



KNOX MOTORS CO., Springfield, Mass.

METZ "Twenty-Two" Roadster



WINNER OF THE GLIDDEN TOUR

$495

Gearless Transmission **Equipped Complete**

Fore door body, extra thick tufted upholstery, plate glass rain-vision wind shield, left-hand drive with center control, 4-cylinder 22½ H.P. water-cooled motor, Bosch magneto, Prest-O-Lite tank, extension top, full elliptic springs, artillery wheels, best quality Goodrich clincher tires, 5 lamps, horn, pump, jack, tools. Speed, 50 miles per hour. Beats 'em all at climbing hills. Secure EXCLUSIVE SALE in your territory. Write for terms and catalog "B."

METZ COMPANY - WALTHAM, MASS., U. S. A.

The New Process Gear Corporation

Out Gears of Quality
Complete Differentials

NEW PROCESS GEAR CORPORATION
SYRACUSE, N.Y

The New Process Gear Corporation

SAFETY
When you buy
Goodrich
Safety Tread **Tires**
Best in the Long Run
FIRST

GARCO ASBESTOS BRAKE LINING.

Absolutely stops the car. It has a wear-resisting and ever-gripping surface which never glazes and outlives, under heavy service, all other brake linings. Its construction, its materials and its chemical surfacing are unique to GARCO LINING.

We also manufacture ASBESTOS CLUTCH LINING and a full line of Asbestos Textiles, Asbestos Metallic Sheet Lining, Gaskets, and Valve Stem Packing.

General Asbestos and Rubber Company
Main Office and Factories: Charleston, S. C. Branch: 312 First Avenue, Pittsburgh, Pa.

THE circulation of the Motor World is a guaranteed one, sworn to by an affidavit, which will be sent in detail to any one upon request

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A Prize Package

For the Repairman in Public or Private Garage



BOX ASSORTMENT NO. 1

Containing 1 strip each of the following:

1/32" x 2" x 9" (All .002" Laminations)
1/16" x 2" x 9" (Half .002" Lam. and Half Solid Brass)
1/8" x 2" x 9" (Half .002" Lam. and Half Solid Brass)

For adjustments: Simply loosen one corner of a layer with a knife or other sharp instrument and peel it off.

"Laminated" Shimming Brass With Laminations of .002"

When it becomes necessary to adjust a bearing, due to wear, with the "Laminated" Separable Shim as a time-saving device, the work can be done by an ordinary mechanic and the same results obtained as from a solid shim fitted by an expert, thus proving an important factor in reducing assembling costs of the manufacturer and maintenance charges of the consumer.

No More Filing or Re-Scraping.

LAMINATED SHIM COMPANY, Inc.

533-541 Canal Street NEW YORK, U. S. A.

"Laminated" Shimming Brass

for producing high-grade Shims is about the most convenient time and labor saving material that has ever been invented for automobile repair work.

"LAMINATED" SHIMMING BRASS consists of a composite slab made up of layers of thin brass (.002 in.) held together by a metallic binder.

To make a Shim of any standard thinness, just take your knife and skin off enough layers to bring the slab down to size.

Result: a Shim "made in no time" of exact and uniform thinness for your purpose.

Can you beat it for convenience and economy?

Write TODAY!

LAMINATED SHIM COMPANY, Inc.

533-541 Canal Street New York, U. S. A.

Triplex Engine Starter
For Ford Cars

Mechanical, durable, simple and efficient. 100 per cent. uninterrupted service from the time it is attached.

Write for particulars regarding dealer arrangements.

UNIVERSAL MANUFACTURING CO.
RACINE, WIS.

KONIGSLOW CLEVELAND

Cone Clutches
Universal Joints
Control Levers

Quality—Service

The Otto Konigslow Mfg. Co.
CLEVELAND

SHALER $3.50

Safety Vul-Kit
Vulcanizer

Save Tires—Saves Repair Bills

Repairs punctures, blow-outs and cuts in casings or tubes, perfectly—makes repair strongest part of tire. No watching, no regulating, automatic in operation. Impossible to undercure or overcure. Has no open flame—no danger if accidentally upset. Anybody can use it. Furnished complete at $3.50 with all repair material. Investigate.

Send for Book "Care and Repair of Tires"—its free.

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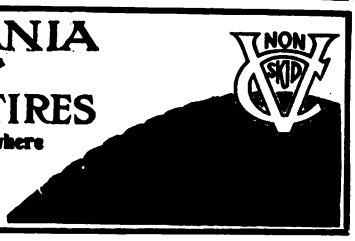
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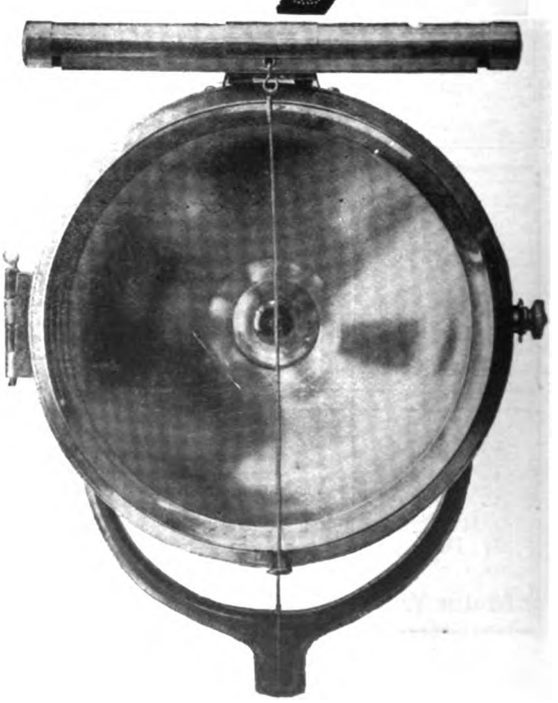
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A Trade Paper Giving the World's Motor News

Volume XL
No. 7

New York, August 12, 1914

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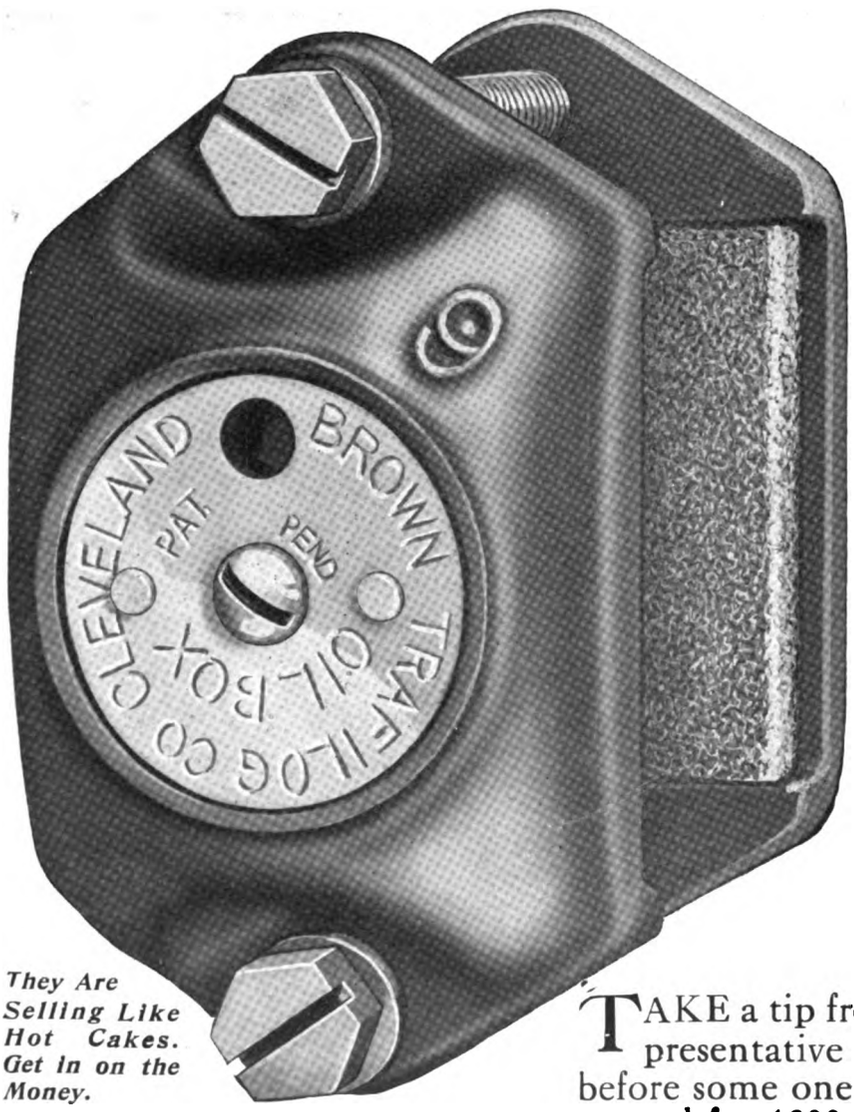
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BUFFALO NEW YORK

Published Weekly by the Motor World Publishing Company, 231-241 West 39th St., New York

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Something New

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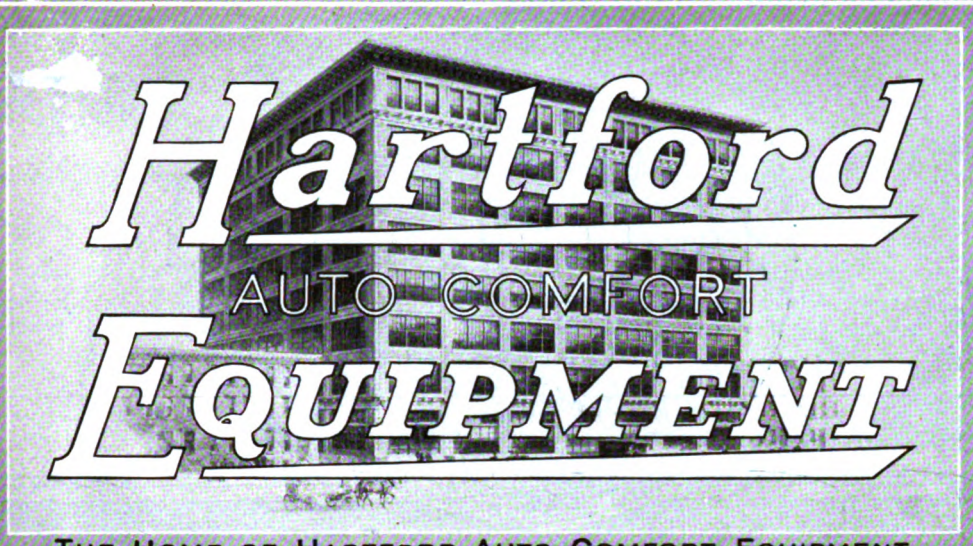
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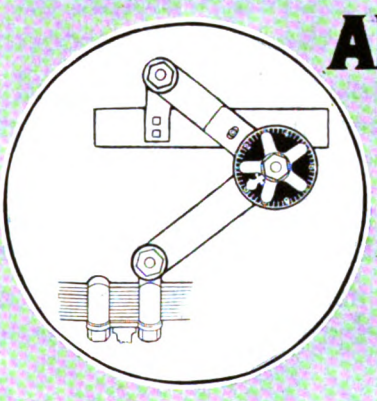
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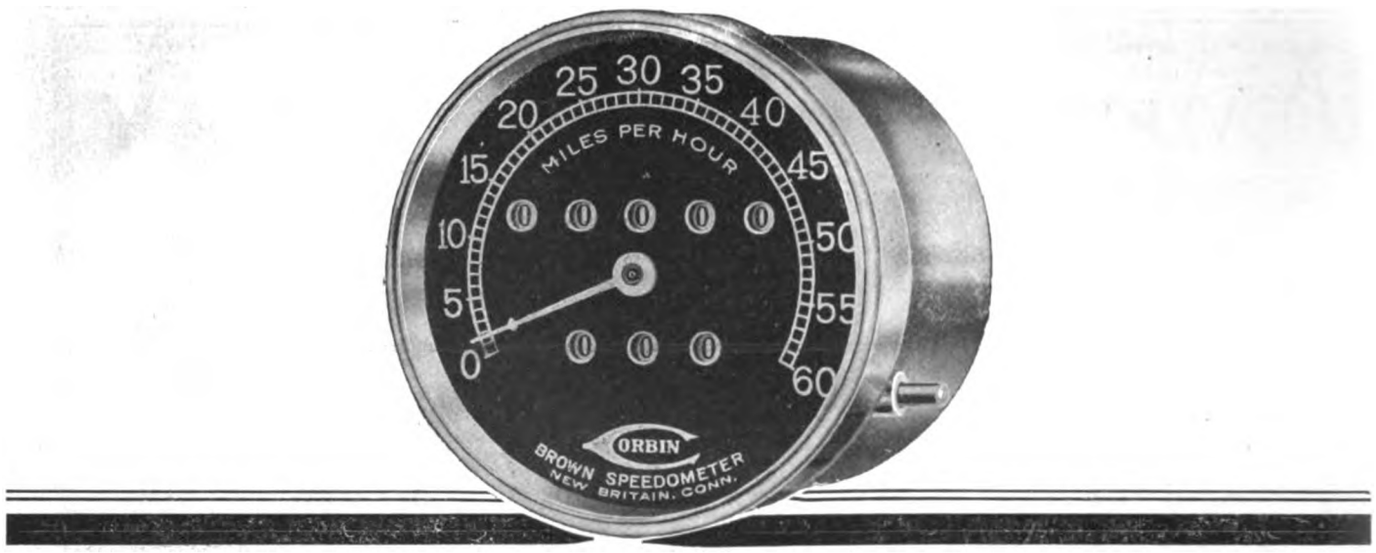
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Investigate its principle and friction-free construction today.
Visit a Corbin-Brown dealer and write now for catalog.

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THE AMERICAN HARDWARE CORPORATION, Successors

NEW BRITAIN, CONN.

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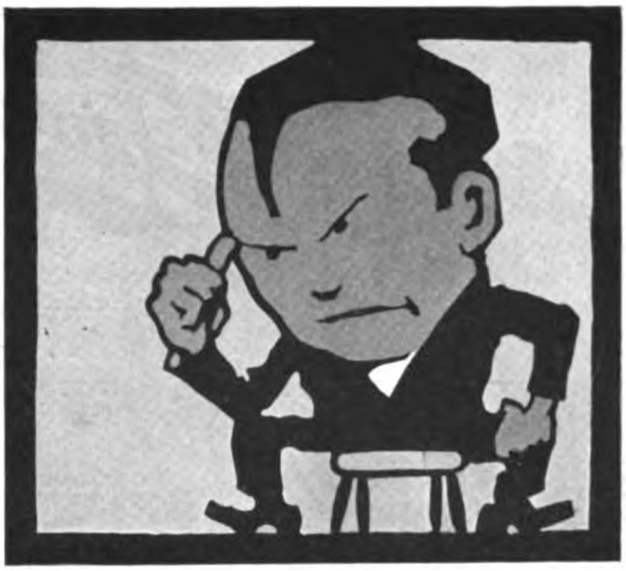
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Crowned fenders
Electric starter
Electric lights
High-tension magneto
Thermo-syphon cooling
Five-bearing crankshaft
Rear axle, floating type
Rear springs, extra long, underslung, 3-4 elliptic
Wheelbase, 114 inches
Larger tires, 34″ x 4″
Demountable rims—one extra
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Center Control
Body: beautiful new Brewster green finish
Complete equipment

Handsome 1915 catalogue on request. Please address Dept. 50.

The Willys-Overland Company, Toledo, Ohio

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MOTOR WORLD

Vol. XL New York, U. S. A., Wednesday, August 12, 1914 No. 7

NEW YORK GARAGES WORK FOR $5 RAISE IN RATES

West Side Garagemen Would Boost Storage $5 and Put Gasolene on 5-Cent Profit Basis—Committee in Charge.

If the work of the Storage Committee which has been working among the garages on New York's West Side is successful the prices of storage in that section of the city will be generally advanced September 1; also, gasolene will be lowered to a point where the price gives the garage a five-cent profit and no more.

The committee is made up of West Side members of the New York Garage Association, and it has been the hope of the whole organization that sometime storage throughout the city might be placed on a paying basis and the profit on gasolene made normal. Up to the present there has been little if any profit in storage, the profit of the business being derived from gasolene, which has been sold at an abnormal profit, as much as 8 and 10 cents.

Many independent gasolene stations have recently sprung up in and about the city, selling at a small margin, and this has cut into the garage gasolene trade; garages which insist that patrons buy gasolene in the garage have met opposition. All recognize the advisability of putting storage on a paying basis and making the retail price of gasolene follow the wholesale figure. The agitation is not new but has not been successful up to now.

The present movement was inaugurated on the West Side by Morris Segall, of the Apthorp Garage, who is being aided by William M. Haradon, Royal Garage; H. M. Gibson, Lincoln Square Garage; A. Debblee, Long Acre Garage, and James S. Griffin, International Garage. They have canvassed the West Side and report that sentiment is in favor of the move. A meeting of the West Side garagemen will be held before September 1, to take definite action on the matter.

The Royal Garage has informed its patrons that its rates will be adjusted September 1. The proprietor states that he will make this move regardless of whether the others raise or not. August 1 he dropped gasolene from 25 to 20 cents, and under the new storage rates will drop it to 18, allowing a five-cent profit.

The proposed rates are in Grades A and B, depending somewhat on the locality and more on the style of building, whether old or modern. Grade A rates would be $40 for open cars and $45 for enclosed cars; Grade B rates would be $5 lower, $35 and $40.

Detroit Betters Shipment of 1913.

During the first six months of 1914 a total of 44,500 carloads of automobiles has been shipped out of Detroit, the total number of cars being estimated at 189,125. During the 12 months of 1913 the total number of carloads shipped by Detroit manufacturers totaled 66,450, the number of motor cars shipped in them being estimated at 282,412. Thus in six months of this year the number of carloads handled by the railroads running into Detroit amounts to nearly 67 per cent of the total handled all last year.

Wire Wheel Pioneer To Visit America.

John Pugh, who is one of the leading exponents of the wire wheel in Europe and one of the pioneers in its development, will sail for New York August 19 and while in America will visit a number of the leading motor car factories. Pugh is manager of Rudge-Whitworth, Ltd., Coventry, Eng., maker of Rudge-Whitworth wheels.

TIRE PRICES GO UP 15% AS WAR BOOSTS RUBBER

Majority of Larger Manufacturers Makes Increases—Scarcity of Ships Doubles Price of Crude in Eight Days.

The price of tires has been raised by nearly all the larger tire companies from 10 to 20 per cent. The action is due to the effect of the European war upon the crude rubber situation, the price of the crude product having advanced 100 per cent in the eight days ending last Friday, August 7.

Crude rubber is just as plentiful as ever, but the war has tied up the London rubber market, through which most of the rubber used in the United States is bought, and English ships, which carry most of the rubber from East India and Brazil, are wary about navigating when hostile battleships are likely to molest them.

After affairs adjust themselves it may be possible for neutral vessels to supply the demand by transporting Para rubber from South America; also, the war may not last long, all of which may relieve the situation; but as it is the majority of American tire builders have no more than enough to last them from six weeks to three months.

The tire-buying season, however, is about over; July and August are the two big tire months of the year and in September the demand falls off as touring declines. For this reason tire manufacturers generally carry a low stock of crude rubber at this time of year and work the made-up stock down low in cleaning out for the following season.

Also, since manufacturers with long-time contracts were badly "stung" a couple of years ago when the price dropped, they have bought more or less from

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month to month ever since, and none of them carry very heavy stocks. Whatever contracts exist are for a certain quantity to be delivered every month and at this time rubber traders are unable to fulfill their contracts.

The price of tires, beginning nearly a year ago, dropped a total of 28 per cent. This was due to competition and a low price for crude rubber. The present increase has sent it about half way back and whether other increases are contemplated would not be stated by the tire men.

Should the war end in a short time, one tire man stated, the price of crude rubber would probably go lower in this country than it had been. This, he said, would be caused by the inability of European factories to recover their normal condition and take the rubber offered by the world's markets, all of which rubber would be sent to this country and glut the market.

The tires which are being sold at the present time and on which the price has been raised are not being made from the crude stock on which the price jumped; the increase in tire prices is based more upon a feeling of apprehension as to future conditions, and it will be several weeks in most cases before any of the high-priced crude is made into tires.

Some Makers Not to Raise.

Because of this some of the manufacturers have declined to raise until the cost of production increases; the Kelly-Springfield, Ajax-Grieb and Michelin companies are standing pat on their former prices, and the attitude of those who state that they will not raise is indicated in the statement of Van H. Cartmell, president of the Kelly-Springfield Tire Co.

"We always base our selling price on our manufacturing cost," he stated, "and while we are able to manufacture at former and present prices we shall not raise the retail price of our tires. If the war should continue and it become necessary for us to make future purchases of crude rubber at advanced prices we would increase the selling price in proportion to the advance in the manufacturing cost."

Horace De Lisser, chairman of the Board of Directors of the Ajax-Grieb Rubber Co., expressed a like sentiment. De Lisser urged manufacturers to avoid frenzy and said no increase would be made in Ajax tires until the cost of making them was increased by the necessity for purchasing crude rubber at advanced prices. This company is not heavily stocked with crude or tires but is selling at former prices.

The increases made range from 10 to 20 per cent, the average being from 12.5 to 15 per cent. The highest increase was made by the Goodyear Tire & Rubber Co., Akron, O., which advanced 20 per cent. The Fisk Rubber Co., Chicopee Falls, Mass., was next in line, with 15 per cent.

Swinehart did not raise its list price but instead cut the discounts given to the dealer and the consumer. Where the dealer got, for instance, 10 and 10, he now gets 10 only, and where the consumer got 10 and 5 for cash, he now gets 5 for cash. The dealer is credited with having cut from the list under the previous arrangement, so that in order to make his former profit he will have to sell at list without a cut.

Little Change in Dealer Rates.

The dealers' discounts remain unaltered in other cases. They range from about 15 to 25 per cent. In some cases there will be a slight adjustment but it will not be radical.

Goodrich and Diamond tires went up 12.5 per cent, as did Empire, Pennsylvania, Federal and United States. Republic's increase, like that of Firestone's, ranges between 12.5 and 15 per cent.

Makers of Racine, Lee, McGraw and many others, have not made advances and state that they have not yet made decision. In many cases, however, the "little fellows" plan to imitate the big ones.

The movement in solid tires is erratic. United States boosted the price 15 per cent, while others state that they will not raise or have not made decision. It was stated by one tire man that the price of solids would not necessarily follow pneumatics inasmuch as solids may be built of less costly material and still be highly satisfactory. Para and a cheaper rubber—sometimes reclaimed—is used in solid tires. Firestone made a move in solids like that of Swinehart in pneumatics and cut the discount by 10 per cent of the list.

Tire Importers Well Supplied.

Tire importers have supplies on hand for about six months and hope their European factories will be running again by the first of the year. In New York there are several imported tires—Prowodnik, made in Riga, Russia; Engleberg, made in Liege, Belgium; Gaulois, made in Clermont-Ferrand, France; Canadian Dunlop, made in Toronto, Ont.

The Gaulois Tire Corporation luckily got in three separate cargoes early this week and is well supplied. The Columb Tyres Import Co. has a good stock of Prowodniks. The Engleberg Tyre Co. received cable advices that the factory, which is on the battle-line of the Belgian and German armies, is at present practically at a standstill, Belgians being busy at other things than tire building. Prowodnik plans to raise its prices about 10 per cent.

The Dunlop, handled by Otto Braunworth, Inc., probably will not be affected.

"What We Need Is Ships," Says Rubber Man—Analyzes Situation

Tying Up of English Ships Which Carry Crude Rubber the Cause of the Shortage.

Crude rubber has reached the remarkable market price of $1.10 a pound, for plantation quality and $1.12 for Para, climbing since August 1 from respective prices of 55 and 70 cents.

This doubling of value of the important commodity is due to the effect of the European war on shipments of rubber from the great plantations of Ceylon and the Malay states. All far eastern rubber cargoes are cleared out of Singapore for London, the world's primary rubber market.

The establishment of an American merchant marine or a decisive battle at sea or peace are the only vistas of hope that importers hold up to the motor car industry.

Stores of "free"—non-contracted—crude rubber in New York city, it is said, do not exceed 500 tons. London has about 1,000 tons on the shipping docks. Perhaps another 1,000 is now en route from England. Several boats have just unloaded or are unloading cargoes at different Atlantic ports. Altogether,

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however, the supply in sight is slim compared with the American consumption of 65,000 tons a year.

And there is no hope from Brazil or Mexico at this time, say the importers.

"Perhaps there are 200 tons accumulated in Brazil and 300 tons in Para," said F. R. Henderson, of the rubber importing firm of Henderson & Korn, today.

May Utilize Flag of Brazil.

"This small stock, which would last one of our factories but a few days, will reach us easily, as shipments from Brazil have not yet been affected—and they probably won't be. The Booth line, English, controls the Brazilian shipping, of course, but there is talk of turning over all of the business to the Lloyd Brasiliere, the Brazilian line that sold out to Booth. Under the neutral Brazilian flag cargoes will come safely and regularly.

"But this doesn't help the rubber situation a trifle. At this time of the year nearly all of the world's supply of rubber comes from Singapore. As a matter of fact, most of the world's supply at any time of the year clears out of Singapore, coming from Ceylon and the Maylay states, largely the latter.

"The Brazilian crops move from October 1 to April 30. No rubber is gathered during other times of the year as the country is flooded with torrential rains and the plantations have to be abandoned. During the harvest season there is a steady market, so that no stores are permitted to accumulate. Therefore we can not depend on Brazil until after the first of October, and then only for normal quantities.

Brazilian Crop About 40,000 Tons.

"The normal Brazilian rubber crop is now about 40,000 tons. American industries consume between 65,000 and 70,000 tons a year.

"The great rubber fields of the Far East, however, produced 70,000 tons in the last year, and that is why all eyes in the rubber world turn east. The crop is an all-year-round one. Incidentally, the rubber harvest is now in Ceylon and Malay, the yield being very small until about 10 years ago when it suddenly began to pick up and outstripped all others.

"Mexico offers no hope. The little crop of past years probably is zero this year because of the revolution. Mexico couldn't keep one factory busy a week.

"We have no idea what factory stocks may be. Factories buy from us on contract.

"There is nothing that we can do to relieve the situation. It seems to be up to the United States just now. No banking relief is needed. What we need is ships, ships that won't be interfered with on the high seas, and plenty of ships."

PRICE MOVEMENT IN PRINCIPAL MAKES OF TIRES

34 x 4 Size

Make of Tire	Per cent of Increase	Plain Was	Plain Is	Non-skid Was	Non-skid Is	Tube Was	Tube Is	Date in Effect
Empire	12.5	$24.35	$27.40	$30.50	$33.85	$5.45	$6.25	Aug. 11
Federal	12.5							
Firestone	12.5-15	26.20	29.45	30.50	33.85	Gray 4.90 Red 5.45	5.65 6.25	Aug. 7
Fisk—Bolted-on	15	30.30	34.85	36.35	41.80	5.60	6.45	Aug. 8
All others	15	26.25	30.30	31.60	36.35	5.60	6.45	Aug. 8
Goodrich and Diamond	12.5	24.35	27.40	26.05	29.30	Red 5.45	6.15	Aug. 8
Silvertown Cord	12.5	38.55	43.35	41.25	46.40	Gray 4.90	5.50	Aug. 8
Goodyear	20	24.35	29.20	28.50	34.20	4.90	5.90	Aug. 6
Kelly-Springfield	None will be made.							
Lee	None as yet.							
McGraw	Probably will advance.							
Michelin	None expected to be made.							
Overman	None to be made for the present.							
Pennsylvania	12.5 Prices being adjusted.							
Racine	None as yet.							
Republic	About 12.5 to 15.							
Swinehart	No raise. 10 per cent cut from dealers' and consumers' discounts.							
United States	12.5	24.35	27.40	33.55	37.75	Red 5.42 Gray 4.90	6.15 5.50	Aug. 8

EFFECT OF WAR IN EUROPE FELT HERE

Motor Car Industry Feels Shock But Cloud Has a Silver Lining.

The effects of the European war are already being felt in many branches of the motor car industry and if hostilities continue for many months they will continue to affect the American industry. Several American accessory concerns report cables cancelling all further shipments to their European branches.

With car building companies the matter is serious, chiefly with those doing considerable export business, and when it is recalled that some American concerns export nearly 20 per cent. of their outputs, the extent to which they will be affected is readily seen. Not a few companies have many cars on hand for export, these having been made with the steering wheel on the right side to meet European driving conditions, whereas their product for American buyers has the wheel on the left side. It will be difficult to move these models.

Shipping on the Atlantic Ocean is heavily handicapped at present, and although the British navy is looked upon to keep the British mercantile marine on shipping schedule, the difficulty is going to be to sell vehicles in countries directly affected by the war for lack of money. With the war costing approximately $50,000,000 a day, which is being buried as though by an earthquake, there is bound to be a scarcity of money after the war.

Already the situation in Europe is acute. On August 1 nearly all of the French factories had stopped purchasing supplies. The big parts concerns in Belgium must be closed now for more than a week. It is safe to assume that German shops are locked up. In fact, motor car production in Europe is at a standstill excepting in Italy and England.

In America tires have already advanced 12 to 15 and in some cases to 20 per cent, as a direct result of the war.

But the industry will be affected further. Foreign parts enter into many American made cars. We have nearly a dozen importers of ball bearings made in France, Germany and Italy, nearly all of which source of supply will be temporarily cut off, and only supplies on hand will safeguard the situation. Much German steel is used in several of our high-grade cars. One Belgian firm has been a big producer of steel now becoming popular with the best grades of cars. Upholstery materials are imported.

But there is a silver lining to the overcast skies. If we cannot sell in one section of the world then it is our duty to develop fields in other sections. Our hold on South America is not strong. We are not entrenched there as are the French, German, Italian and English makers. South America is going to continue to purchase cars, and the opportunity for America would seem at hand. Our makers will have to turn to these fields with intensified effort. Then, too, the home market offers increased fields, with its good crops generally, and a possible market for them in Europe.

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COMMISSION ALLOWS RATE RAISE ON CAR SHIPMENTS

Motor Cars Fall Under Class Rates on Which Full Increase Asked Is Allowed—Apply West of Buffalo.

After lengthy delay the Interstate Commerce Commission has at last made public its decision with regard to the application of the railroads for a horizontal 5 per cent increase in freight rates. In the main an increase of 5 per cent has been allowed on class rates, under which designation motor cars are shipped; the rates on commodities have not been advanced, nor will there be any increase in the rates on lake and rail shipments. Such increases as have been made will apply only in the Central Freight Association territory, which lies between Buffalo and Chicago. It is in this territory that most of the motor car production centers.

The increase in freight rates will not apply to shipments going to points east of Buffalo but a large percentage of the shipments going south will bear a part of the 5 per cent increase; the increase will not apply to shipments going to the Pacific Coast, however, due to the existence of a through rate.

Taking the case of a freight rate which is 50 cents per 100 pounds, the net increase amounts to 5 per cent, which on first class merchandise brings the figure to 52½ cents. Motor cars, however, are classed at 110 per cent of first class rates, which brings the figure to 57¾ cents per 100 pounds.

The summary of the decision as prepared by the Interstate Commerce Commission is as follows:

The contention of the railroads that their revenues under the present scale of rates are inadequate is sustained, the Commission saying that the operating income of the railroads in official classification territory, taken as a whole, is smaller than is demanded in the interest of both the general public and the railroads.

The present financial difficulties of the railroads are recognized by the Commission as a problem not only of the railroads but of the public, which it is the duty of the Commission to help to solve. On this point the Commission says, speaking of the need of the carriers for additional revenues, that "it is our duty and purpose to aid, as far as we legally may, in the solution of the problem as to the course carriers may pursue to meet the situation."

The Commission points out that the official classification territory embraces three rate territories, known as the New England territory, lying east of the Hudson river; the trunk line territory, lying between the New England territory and the Buffalo-Pittsburgh line, and the Central Freight Association territory, lying between the Buffalo-Pittsburgh line and the Mississippi river, and that the financial and traffic conditions of the railroads operating in these three rate territories differ widely.

The Commission finds that the rates in Central Freight Association territory, as a whole, are not only lower than the rates in either trunk line or New England territory, but that they are lower than the rates in any other part of the United States. If the average freight rate had been as high on the Central Freight Association territory lines as on the roads in trunk line territory, the former would have earned in 1913 $56,000,000 more than they actually did, and that the 28 representative roads in Central Freight Association territory, which are most in need, would have earned $29,000,000 more.

The Commission finds that the class rates effective in Central Freight Association territory are so low that an increase of 5 per cent would clearly not be unreasonable, but points out that the class rate structure in that territory is honeycombed with inconsistencies.

The Commission finds that the carriers operating in Central Freight Association territory are entitled to an increase not exceeding 5 per cent on all class and commodity rates on shipments wholly within that territory, except the rates on coal, coke, iron ore, cement, brick, tile, clay, starch and plaster, as to which the carriers did not sustain their burden of proof, and any rates which are controlled by specific unexpired orders of the Commission.

The proposed increases in lake-and-rail rates and in rates between Central Freight Association territory and other portions of official classification territory are disallowed. The effect of the findings is also to disallow the application of the proposed minimum increase of 5 cents a ton on those commodities for which a charge is now made of less than a dollar a ton. This minimum increase, in some instances, would have resulted in increasing rates as much as 25 to 50 per cent.

The Commission suggests that "all railroads in official classification territory should ascertain to what extent * * * special services for which no special charge, or a non-compensatory charge, is made * * * constitute an unjust burden upon the carriers or result in unjust discrimination among the shippers." In this connection the Commission calls attention to compilations prepared by it from the carriers' answers to the Commission's inquiries, showing the practice of individual roads as to: (a) allowance of free time for loading or unloading carload freight; (b) collecting and delivering freight; (c) storing freight; (d) transporting containers; (e) furnishing and transporting dunnage, preservatives, etc.; (f) furnishing or paying for wharfage and dockage; (g) refrigerating service; (h) loading and unloading carload freight; (i) re-consigning carload freight; (j) other special services." The Commission also refers to "independent investigation of some of these subjects, and particularly of switching, lighterage, and storage in New York, Chicago and other large cities," the results of which will be submitted later for the consideration of carriers and shippers.

The Commission recommends that the practices of granting free transportation of passengers and private cars should be further restricted by the carriers, and calls attention to the fact that at the average rate per passenger mile in official classification territory in 1913, the passenger miles represented by trip passes alone would have yielded in passenger revenue $18,520,000.

The Commission recommends a careful review of methods for "increasing freight-car efficiency," saying: "Taking the average of all roads in official classification territory for the whole year, the time a car is moving in trains probably does not exceed three days out of thirty, and the car is under load only two out of those three days. Furthermore, the cars under load are loaded on an average to only about 58 per cent of their capacity. The percentages of empty movement and of waste capacity in loaded cars have both grown."

WASHINGTON PUTS HORSES AND CARS IN SAME CLASS

Horse-Drawn Vehicles Must Have Tags and Are Subject to Same Traffic Rules as Motor Cars—Wagons To Be Tagged.

Starting today new traffic regulations will go into force in Washington, D. C. One of the most important new rules is that no vehicle, except a commercial vehicle, loading or unloading, shall stand for more than 15 minutes at any place on 14th and 15th streets between Pennsylvania avenue and I street, the most congested section in Washington, between the hours of 8 in the morning and 6 at night. Exception is made of government vehicles.

Another important regulation is that every horse-drawn vehicle shall have a metal tag so affixed on the right side as to be visible 20 feet. A charge of 50 cents is to made for each tag. No vehicle horse drawn or motor propelled will be allowed to approach within 15 feet of any car while the same is stopped or stopping for the purpose of taking on or unloading passengers, nor within such distance of the place where a passenger shall have left the street car until the passenger shall have reached a place of safety. Vehicles moving north or south will have right of way over those moving east or west.

The regulations also prohibit the use of a motor muffler cut-out as well as unnecessary or excessive smoke. Electric or acetylene headlights are prohibited on the streets unless the rear reflectors are removed or the front glass is either ground or covered with some material of sufficient density to prevent dazzling or blinding to persons using the streets.

The new regulations expressly set forth that pedestrians should avoid interference with traffic and to this end should not step from the sidewalk without first looking to see what is approaching. They are further admonished to cross the street at a right angle, preferably at a regular crossing at the end of a block and, where a traffic policeman is stationed, wait for his signal. Under the old law, which has never been enforced, pedestrians were compelled to cross a street at a regular crossing, but under the new regulations it is optional where they cross, although the regulations ask pedestrians to use the regular crossings instead of crossing at any point. Penalties varying from $5 to $40 are provided.

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PIERCE-ARROW MAKES FEW CHANGES FOR 1915 SEASON

Reduces Price of Largest Limousine by $100—Center of Frame Dropped and Appearances Are Improved.

The three six-cylinder cars which constitute the line produced by the Pierce-Arrow Motor Car Co., Buffalo, N. Y., will be continued in their new form under the designation Series 3 with practically no change and, with but one exception, no change has been made in the prices. The one exception concerns the largest limousine which now lists at $7,000 instead of $7,100. The prices of the other models remain as follows:

	38-C 3	48-B 3	66-A 3
Touring	$4,300	$5,000	$6,000
5 Passenger	4,300	4,900	5,900
Roadster	4,300	4,900	5,900
Limousine	5,200	6,000	7,000
Vestibule Brougham	5,350	6,200	7,200

Although few changes have been made in the mechanical construction, the principal one being a drop in the central portion of the frame, the appearance of the cars has been changed considerably. The bodies are lower, as are the running boards, fenders are wider and the seats in the driver's compartment are divided, although an undivided seat will be provided on specification. As heretofore, starting gear is at the right with the control levers also located on the right-hand side.

The three chassis are essentially alike in construction. The largest, which is known as 66-A 3, having a bore and stroke of 5 x 7, the next smaller, which is 48-B 3, having a bore and stroke of 4½ x 5½, and the smallest, which is 38 C 3, having a bore and stroke of 4 x 5½. In each case cylinders are cast in pairs with the valves on opposite sides. The force feed lubricating system is retained, as is the electrical equipment, including separate starting and lighting units; these parts are of Westinghouse manufacture.

The gasolene system has been entirely revamped, a change having been made from gravity to pressure feed. The gasolene tank, therefore, has been relegated to the rear of the chassis where it is protected by a rear bumper. Clutches in each case are of the cone type, lubricated by an oil ring; four speeds are provided by the gearset, which incorporates an interlocking device. A power driven air pump is driven through the gear box countershaft. Rear axles are of the semi-floating type.

Equipment is more complete than heretofore, the list including Johnson demountable rims, Silvertown cord tires and, in addition to the usual top, windshield, speedometer, etc., bumper, trunk rack, shock absorbers and a supply of oils and greases and separate parts.

Overland Taking Up $250,000 Stock.

The Willys-Overland Co., Toledo, O., has prepared to take up a large block of its $5,000,000 preferred stock. For the purpose, $250,000 has been set aside from the net earnings. Instead of obtaining the stock in the open market the company has invited preferred stockholders to offer their holdings at their own prices. A notice which accompanies the invitation states that "the preferred stock thus purchased is forever retired and can never again be issued or reissued." Shareholders are directed to send their offers to the Bankers' Trust Co., New York city, before 12 o'clock noon of August 20.

Salem, N. H., To Have First Show.

Salem, N. H., is to have the distinction of staging the first motor car show of the 1915 season. The show will be held the first week in September and will be under the direction of Chester I. Campbell, manager of all the Boston shows. It will be held in Rockingham Park and will be an outdoor show. It is expected that dealers from Boston, Lowell, Lawrence, Haverhill, Nashua, Manchester and other New England cities will exhibit their wares.

Top Makers To Produce Truck.

The C. J. Wilson Co., manufacturer of motor car tops and trimming accessories, Detroit, Mich., is about to place on the market a 1½-ton truck. The new vehicle is designed by G. Earl Porter, formerly with the Admiral Motor Truck Co. C. J. Wilson is president of the company and Stanley G. Wilson, secretary and treasurer. The company has no connection with the C. R. Wilson Body Co. of the same city.

Walpole Creditors Get 4% More.

Creditors of the Walpole Tire & Rubber Co., Walpole, Mass., are to receive an additional dividend of 4 per cent. This has been ordered by the United States District Court in Boston, $50,000 having been set aside for the purpose. In addition to what already has been paid, $171,000 has been disbursed to the creditors.

MOON ADDS NEW FOUR AND SMALL SIX IN 1915 LINE

Latest Product Includes Nothing But Continental Motors — Light Six Sells for $1,575—Older Six Altered.

The line of cars produced by the Moon Motor Car Co., St. Louis, Mo., for the 1915 season will include three models, of which two are brand new all the way through, the third having been improved in so many respects that it is practically a new car also. The two new cars are a four, which sells for $1,350, and a six, which sells for $1,575. The larger six-cylinder model sells for $2,250. All three cars have complete equipment, including Delco electric lighting, cranking and ignition system, top, windshield, speedometer, clock, headlamp dimmers, etc.

Not the least important of the changes that have been made in the line is the exclusive use of Continental motors. The new four has a bore and stroke of 3¼ x 5 inches and the six a bore and stroke of 3½ x 5 inches. The older six has a bore and stroke of 3¾ x 5½ inches.

In all three cars an improved type of multiple disk clutch is used, the construction having been changed to provide a means of holding the disks separated in a way that reduces wear. All three have three-speed selective gearsets and floating rear axles.

Both of the new cars have the same wheelbase—130 inches—and in many other respects their specifications are much the same. Thus, for instance, both, as well as the older six, are driven from the left side with the control levers in the center; both have 34 x 4 tires and block cast L-head motors.

The changes that have been made in the older model are important. The wheelbase has been decreased from 134 to 130 inches, the doors widened, the rear seat upholstery made thicker and more room provided in both the driver's compartment and the tonneau. It is stated that 150 pounds has been removed from the rear axle, chiefly through the use of a crucible steel housing instead of the malleable one used in the older cars.

The brake drum diameter has been increased from 14 to 16 inches, a silent chain drive to the Delco distributer adopted and a new braking system installed. A Klaxon horn and the Stewart-Warner vacuum fuel system have been added to the equipment.

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FIVE REEL MOVIE SHOW HELPS MAXWELL DEALERS

First Release for Benefit of Middle West Representatives Shown in Chicago—Complete Car Built on Screen.

One of the largest advertising projects brought to the public eye has just been started by the Maxwell Motor Car Co., Detroit, Mich., in the form of a five-reel moving picture, showing various factory machinery, the method of building the car and other incidents connected with the selling and performance of the Maxwell 25.

The first release was shown August 7 at the Congress Hotel, Chicago, Ill., to more than 150 Middle West Maxwell dealers who came to Chicago at the invitation of Charles Strieby, a factory man in charge of the moving picture advertising campaign. The men had luncheon at the hotel and then after a short talk by Mr. Strieby the pictures were shown.

Many of the automatic machines, those making parts requiring four- five, six, and as many as eight, operations are shown. The spring tester and machine for determining the tensile strength of the materials of Maxwell construction were shown in operation. The spectators are taken through the factory from the foundry to the shipping platform. The drop forge machines are shown and in the picture a man is seen making a lamp bracket. Cylinder grinding, front axle drilling, rear axle casing making, and innumerable other operations are shown, and after the mechanical construction is given the assembly departments are pictured.

The screen then shows motor assembly and motor testing, chassis assembly and testing, and following this the observer is taken through the body room, the upholstery department, and in fact after the reels showing the mechanical details and body work of the car have been shown the spectator has nothing to ask concerning the Maxwell 25.

The last two reels are devoted to the selling and performance of the little car. One reel is taken up with a story of a girl who wished to have a motor car and urged her father to purchase one for her. The father is shown reading the Maxwell catalog and after some persuasion by the daughter he leaves the house for a trip along motor row to inspect the car. He stops at the Maxwell agency, examines the car, and then with the agent rides home, where he invites his daughter to be present at the demonstration. The action of the irrevisible steering wheel is shown by taking the car to a square and setting the steering wheel while the car is running. The driver then alighting from the car permits it to run in a circle without passengers. After this demonstration the man buys the car and the next scene shows his daughter driving it alone and later taking out five of her friends.

After the little selling feature mentioned the Maxwell 25 is shown in various hill climbing stunts that have taken place on the Pacific Coast. The climbing of Mt. Rubidioux is but one of the feats shown, while many incidents connected with other Maxwell preformances of note are also screened.

The picture, if seen by prospective owners, will undoubtedly make a deep impression and do a great deal for dealers throughout the country.

About $150,000 has been spent in the production of 48 sets of this film and it is the purpose of the company to show the four reels in every important center in this country.

The fact that the picture will be shown in a certain town will be widely advertised perhaps weeks before and the dealers will get a chance to have all prospects lined up for the day or night of the performance. At some towns it will require a week to show the picture. The picture also will be very helpful to Western dealers who cannot spare the time to go to the factory at Detroit and see how the car is made. By remaining away from the factory many selling talks are lost, but the pictures will assist the dealer and his men in impressing the buyer of the sturdiness and ability of the Maxwell car.

Compensation Insurance Cut in Ohio.

The Ohio Board of Awards, sitting in Columbus, O., and having in charge the administration of the Ohio workmen's compensation law, has reduced the premium rates to be charged employers by an average of approximately 5 per cent. Garage and repair-shop operators and taxicab companies will benefit materially by the cut.

The old rate of $1.65 per $100 of the payroll for chauffeurs has been reduced to $1.49. The old rate of 75 cents for all garage employes has been changed to 65 cents, and the old rate of 65 cents for employes of automobile plants and branches has been similarly reduced to 60 cents.

MULFORD IN A PEUGEOT ENTERED FOR ELGIN RACE

Smiling Ralph to Drive French Car That Cleaned Up at Galveston—Nineteen Drivers and Cars Now in List.

Ralph Mulford, with a third Peugeot, the one in which he cleaned up at Galveston and which also was Boillot's mount in the last 500-mile race at Indianapolis, is the nineteenth entrant in the Elgin road races which are booked for August 21-22. The entry is made by the Peugeot Import Co., of New York. Just prior to the recording of the Mulford entry, Frank Fox nominated the Gray Fox, with Howard Wilcox as pilot.

Entries to the Elgin close next Saturday, but even if no more come in before then, the Chicago Automobile Club already has a field that surpasses anything ever before secured for the Kane county classics. In the way of drivers it has such celebrities as Ralph De Palma, Bob Burman, Barney Oldfield, Spencer Wishart, Ed Pullen, Gil Anderson, Ralph Mulford, Ed Rickenbacher, Harry Grant and Howard Wilcox, while in the way of cars there are three Peugeots, three Stutzes, three Mercers, two Marmons, two Duesenbergs, two Sunbeams, Mercedes, a Braender Bulldog, Tahis, and the Gray Fox. When Moross names the Maxwells with Tetzlaff, Hughes and Carlson, then the list will round out well. It looks as if 25 cars would start each day.

Already the drivers are hurrying to Elgin and informal practice now is going on. The Sunbeams, Duesenbergs, Tahis, Marmons and the Dearborn Stutz already are there.

To Form Trade Association in Detroit.

It appears likely that within the next few weeks an organization will be formed in Detroit by dealers in tires and motor car supplies and accessories as the result of a meeting which was called last week by the local branch of the Goodyear Tire & Rubber Co. About 75 dealers attended the meeting, which was called for the purpose of discussing the merchandising of tires and accessories in general. A representative of the Goodyear factory addressed the tradesmen and in doing so laid stress upon the necessity for maintaining prices, on the value of attractive window displays and the vital principle that lies in proper cooperation.

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Increasing Tire Life

The first direct result on the motor car industry in America of the great European war is a very general increase in the price of tires ranging from 12 to 15 per cent and in some cases more.

This increase has been brought about by the shortage of crude rubber in America, few if any of the tire factories having a supply to serve longer than 3 months and some of the companies not that long.

This shortage in supply becomes all the more serious because of the difficulty of getting more crude rubber into the country, as London is the center of the world's rubber market, and rubber, whether from the East Indies or from Brazil, clears through London. The supply reaches this country on British ships, and with shipping tied up a continued state of commercial inaction on the high seas can only be interpreted as pointing to still further increases in the price of rubber.

Brazil Rubber Waning

Brazil is not the factor in furnishing crude rubber for the tire industry that it was 5 years ago. True the Para gum is imported in large quantities but the latex plantation rubber from the East Indies and Ceylon is imported in nearly twice the volume that the Brazilian Para is. The plantation rubber industry in the East has been pushed with amazing celerity during the past 5 years, and as this rubber comes on the market in well washed form it has found a ready market. The figures for the last year show approximately 70,000 tons of rubber from the East imported as compared with 38,000 tons from Brazil. The Brazilian industry is not so intensified as that in the East, and while Brazil has enormous possibilities it will require much development to bring it up to even a good percentage of the American demand.

Should the war be short there is little question of a continued acute situation in the rubber market. The plantations of the East are still growing rubber and only ships are needed to bring it to our shores. Meantime, however, the price of crude is bound to soar. In 10 days it has risen from 55 cents to $1.10 and will go still higher, in that brokers' information shows there is little available in New York, very little in London or Liverpool and not much on the high seas between England and America.

Conserve Present Supplies

Fortunately for the tire situation the crisis has come at practically the close of the touring season, July and August being the heaviest months of the year. This, coupled with the fact that many of the tire companies have supplies of crude adequate for several weeks, will assure freedom from any tire panic until the opening of the spring season. Military experts declare that with the magnitude of the present armies in the field it will be impossible for some of the countries to maintain these longer than 80 or 100 days, and with a short war there will not be that acute condition that months of continued warfare would surely make certain.

In the meantime it behooves tire dealers, jobbers, users and everyone connected with the industry to conserve the existing supplies. Dealers can do much to reduce the tire wear by their customers. With cooler days the life of the tire will be increased, but slower speeds can be called for. The reduction of an average country pace from 28 miles per hour to 22 or 25 will have a wonderful effect on increasing the tire mileage.

Work With Owners

Tire and car dealers can go further and counsel their owners to see that tires are kept in a better state of repair. Surface cracks can be vulcanized or repaired with many of the different filler mixtures so that the water is kept away from the fabric. Water rots the fabric and once the fabric is gone a blowout follows and the usefulness of the tire is at an end. It is a very small percentage of car users that looks after the work of keeping the tread in good condition. The value of such attention can only be appreciated after giving such attention for several months.

The proper lining up of the front wheels is a factor in tire life. Only last week an eastern dealer repairing a car turned it out with the front wheels badly out of line and in a little over 20 miles of travel the tire treads had been perceptibly worn. The damage from this source is very great. Dealers can do valiant service for the present tire situation by campaigning for better tire attention. Use circulars, use posters, and talk it. The result will be greater confidence in you by your customers.

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PART OF THE DELEGATION OF 125 DEALERS AND SALESMEN WHO GATHERED

Packard Terra-Marine Convention Draws 125

Monotony of Three-Day Factory Business Session Broken by a Cruise—Fun Is Mixed With Work.

The Packard sales session which started Wednesday, August 5, was brought to a close August 7, 125 dealers and salesmen from different parts of the country having been in attendance at the three-day session which was substituted this year for the annual convention-cruise.

Vice-president and General Manager Alvan Macauley, who opened the meeting, welcomed the Parkard dealers and expressed the appreciation of the company for the work they had done during the year just ended, which was one of the best in the history of the company. That 1915 will be even a bigger year was Mr. Macauley's opinion, and he believes that the European war means a great future for the high-grade American automobile in Europe.

Vice-president S. D. Waldon spoke about the new Packard models, commenting particularly on the quality of the chassis and the great margin of safety that is built into it. He stated that it was the duty of every automobile manufacturer to make his cars as safe as it is possible to build them, this being his first duty to all concerned. He commented upon the Packard speed tests at the Indianapolis speedway, where the "3-38" covered 62.4 miles in one hour and the "5-48" covered 70.4 miles. These tests, linked with the great strains of transcontinental touring which the same cars had been subjected to before the Speedway tests, illustrate the great margin of safety of every car that leaves the Packard factory.



WHIPPLE, OF BINGHAMTON, AND McCREA, OF ST. LOUIS

The various fine points of the Packard 1915 models were discussed by Mr. Waldon, among them the improved lighting system, primary and auxiliary oiling system, quietness and clean design of the whole power plant.

Chief Engineer J. G. Vincent followed and gave a detailed technical talk concerning the Packard construction, after which there was a questionnaire prepared by the dealers.

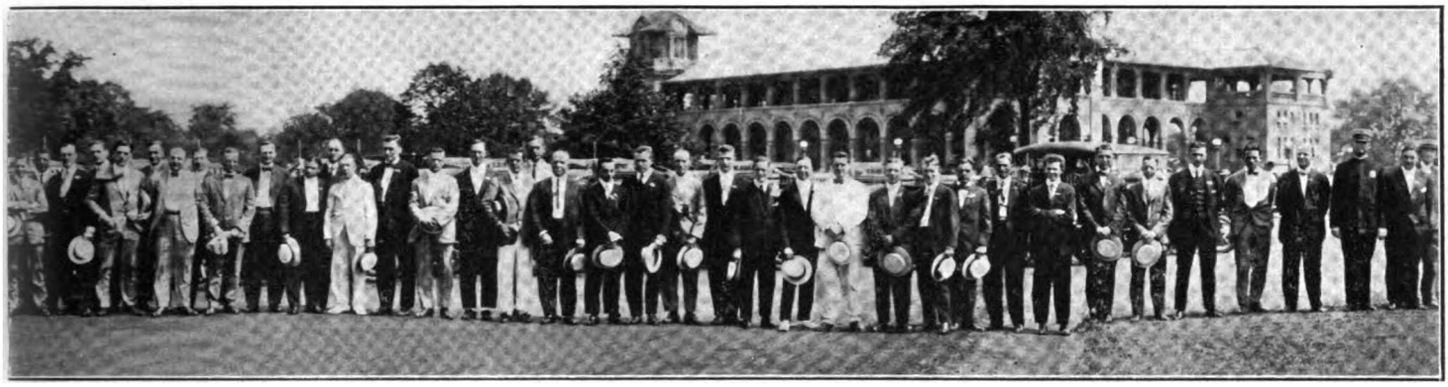
This concluded the day's session of business and was followed by a frog and chicken "session" at the Detroit Boat Club, at Belle Isle.

Tuesday the first speaker was Sales Manager H. H. Hills, who took up the various methods of sales procedure.



MORE OF THE DELEGATION OF PACKARD REPRESENTATIVES WHO WERE

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AT THE PACKARD FACTORY FOR THEIR THREE-DAY SALES CONVENTION

Sales ethics were emphasized strongly and the value of fair play courteous treatment to purchasers and competitors



E. J. ELLIS AND R. J. W. HAMILL EXCHANGE VIEWS

alike was made evident. In congratulating the dealers and salesmen on their work during the business year of the Packard company just ended, he attributed a great portion of it to the personnel of the Packard sales force in general as representative citizens of their various communities.

The dealers then entered upon a general discussion on the problem of handling used cars and the policy of taking them in trade for new Packards. High-class advertising, demonstrations, attractiveness of window display, were also among the topics discussed.

A parade of 38 new demonstrators, headed by the Packard band, followed, and following a specially laid out course through the city went to the casino on Belle Isle, where a panoramic picture was taken and luncheon served. Then followed a baseball game and a swim in the Detroit river at the Belle Isle bathing beach.

In the evening the ship Sapho was chartered for a cruise on Lake Saint Clair, and this was enlivened by boxing bouts between members of the Packard Recreation League.

Operating Manager C. J. Moore spoke about sales and service on Friday morning and after more informal exchanges of views on various matters pertaining to the Packard policy and methods the session came to an end. During the afternoon and on Saturday the dealers returned home in their new demonstrators.

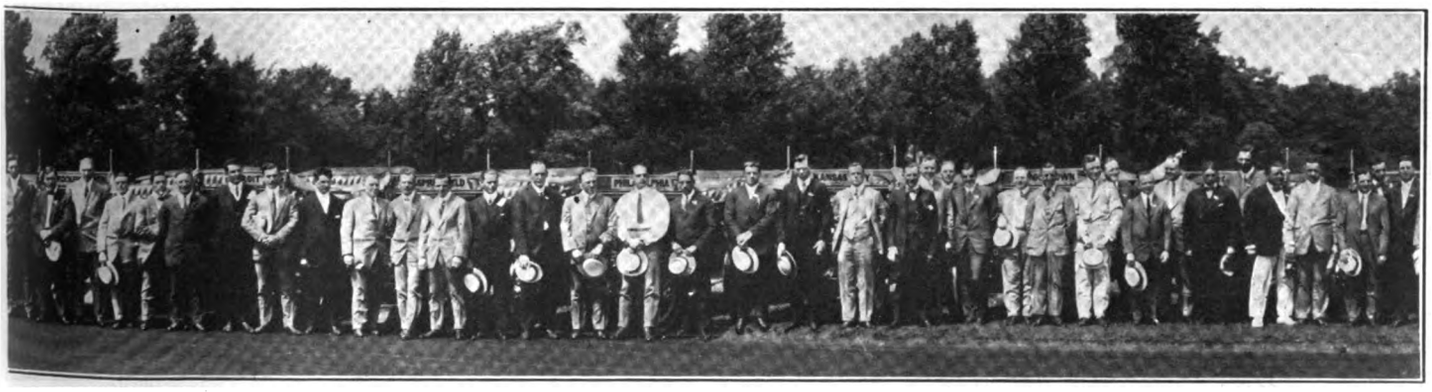
R. N. Goode, manager of the Packard Motor Car Co.'s branch in Paris, was in attendance and informed the company of the fact that the $50,000 worth of Packard cars which were at the Paris branch had been seized by the French government.

The complete list of those present follows:

Palmer Abbott, New Orleans; J. F. Alexander, San Antonio; A. L. Alexander, Waterloo; E. C. Anthony, Los Angeles; H. K. Anthony, Peoria, Ill.; Dale Armentrout, Lima, O.; M. L. Arnold, Wichita, Kan.; F. E. Avery, Columbus; H. W. Avery, Jr., Detroit; E. R. Beck, Salt Lake City; Fred Benkendorf, Milwaukee; M. R. Bird, Rockford, Ill.; J. A. Blackburn, Chicago; C. C. Blackmore, Dayton, O.; A. S. Blair, Baltimore; E. C. Blake, Brooklyn, N. Y.; W. E. Brearley, Chicago; W. S. Bringman, Roanoke; W. G. Brooks, Philadelphia; M. J. Budlong, New York; Emil J. Buck, Davenport; W. F. Bull, Bridgeport; E. E. Caister, Los Angeles; R. K. Caldwell, Cincinnati; R. E. Campbell, Cleveland; A. C. Candor, Williamsport; R. C. Chidester, Milwaukee; S. H. Clapp, Pittsfield; F. L. Cochran, Rochester; W. B. Coleman, Atlanta; M. D. Cubbage, Bay City; E. Conrad, Scranton, Pa.; H. M. Damon, Buffalo; H. Dandurand, Montreal; A. N. Davis, Worcester; B. C. Day, New York; J. C. Donahue, Uniontown; John Doran, Spokane; N. P. Druck, Trenton; J. H. Dwire, Houston; H. R. Edwards, Portland; C. G. Embleton, Springfield; J. D. Evans, Hartford; J. T. Foley, Cleveland; C. A. Forster, Cleveland; J. W. Frazer, Nashville; Alvan T. Fuller, Boston; L. R. Foulkes, Philadelphia; H. M. Glover, Chicago; R. M. Goode, Paris; F. C. Graves, Boston; H. E. Greene, Amsterdam; F. C. Grenham, St. Louis; O. L. Halsey, St. Louis; R. J. W. Hamill, Baltimore; H. L. Hammond, Indianapolis; J. M. Harris, Milwaukee; J. F. Hart, Rochester; G. H. Hemming, Columbus; W. R. Hicks, Montreal; A. Holley, Rochester; E. W. Holmes, Chattanooga; Tracy Holmes, Chicago;



H. L. HAMMOND AND F. ELLIS HUNTER, BOTH OF INDIANAPOLIS



"PANORAMED" DURING A PLEASURE JAUNT TO BELLE ISLE LAST WEEK

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G. H. Hopkins, Pittsburgh; F. E. W. Howe, Boston; E. V. Hugo, San Antonio; F. Ellis Hunter, Indianapolis; E. B. Jackson, Philadelphia; C. W. Johnston, Uniontown; S. P. Johnson, Des Moines; A. E. Jones; Columbus; Robert Jones, New York; R. C. Kilgour, Toronto; E. O. Kizer, Pittsburgh; D. Lane, New York; R. C. Lemm, Denver; H. Ludwig, Providence; D. H. Luttrell, Washington; W. D. MacMillan, Jr., Wilmington; L. R. Mack, Albany; J. J. Mandery, Rochester; L. J. McCracken, Newark; R. L. McCrea, St. Louis; Douglas McQueen, Birmingham; J. J. Meade, Springfield; L. L. Miles, Louisville; F. H. Miller, Brooklyn; O. F. Monahan, Baltimore; F. E. Morris, Fairmont; E. J. Mott, Chicago; J. A. Muir, Baltimore; F. J. Murray, Milwaukee; W. N. Murray, Pittsburgh; P. C. Nelson, Hartford; H. W. Nuckols, New York; F. E. Parker, Chicago; F. G. Pennal, Montreal; Mark Perkins, Youngstown; F. R. Porter, Cleveland; H. R. Rasmussen, Boston; Frank C. Riggs, Portland; C. A. Robinson, Boston; M. T. Rogers, Buffalo; J. H. Rose, Bradford; J. H. Rosen, Philadelphia; N. B. Ross, Saratoga Springs; W. E. Seeley, Bridgeport; W. T. Sharpe, Akron; D. J. Sheeran, New York; L. T. Shelton, Kansas City; W. F. Stebens, Detroit; L. V. Stevenson, Washington; Geo. Southerland, Chicago; W. B. Standley, Chicago; W. A. Sturdevant, Bridgeport; W. A. Turgeon, Chicago; W. B. Varley, Rochester; R. R. Wakefield, St. Johnsbury; G. Whalen, Rochester; R. W. Whipple, Binghamton; G. W. White, Cincinnati; R. G. Wright, Youngstown; D. W. Young, Houston.

Changes Among Prominent Tradesmen.

R. K. Roberts, San Francisco, has been made assistant sales manager of the Oakland Motor Car Co., Pontiac. He will have charge of Pacific Coast business.

The Chalmers Motor Co. has appointed Joseph Fields, formerly of Fargo, N. D., assistant sales manager. He will be stationed at the Detroit plant.

Charles A. Brownell has been made advertising manager for the Ford Motor Co., Detroit, Mich. Previously he was with the J. Walter Thompson Advertising agency.

W. M. Hogle has resigned as general sales manager of the Alma Motor Truck Co., Alma, Mich. He is organizing a new company, the details of which shortly will be forthcoming.

L. L. Barnes, formerly with the Westinghouse Electric & Mfg. Co., has joined the sales department of the Federal Motor Truck Co., Detroit, and will act as district representative in the South.

George L. Willman has been appointed advertising manager for the Studebaker Corporation, Detroit, Mich. His duties will not be new to him as he was assistant advertising manager under William S. Pettit.

C. R. Dashiell, who for several years has been vice-president and sales manager of the L. Markle Co., Studebaker distributer in Chicago, has severed his connection with the company. It is understood that he proposes to become affiliated with another large manufacturer.

INSURANCE "CROOK" AND BAD CHECK MAN AT WORK

One Sells Accident Insurance and Collects Five Cents per Policy—Other Cashes Numerous "No Good" Checks.

Two men, engaged in the nefarious business of obtaining their living at the expense of others, have within the past week been operating in two widely separated sections of the country. One of them has been working the territory along the Pacific Coast ostensibly in the interests of the Midland Casualty Co., Chicago, Ill., which company, however, denies any responsibility for his acts. The other has been cashing bad checks in parts of Ohio.

The first news of the operations of the first of these men came from the Frank O. Renstrom Co., San Francisco, Cal., which writes as follows:

"Automobile men are warned to be on the lookout for a medium-sized, smooth-faced, man of about 39 to 40 years, a smooth, convincing talker, who makes good use of the term brother, and who may exhibit a Masonic pin or a K. of P. emblem, and who seems to be traveling about the coast country selling accident insurance policies, which the purchaser is supposed to give away as premiums with the goods sold.

"Gives name of Greenwood and shows an order book signed by names of many automobile concerns, indicating that he has done business with them. Claims at some places to be operating out of a general headquarters located at 225 East Fourth street, Los Angeles, which is not his office at all.

"Shows accident insurance policies and sells them at 70 cents per thousand of insurance, promising delivery later, and collects 5 cents per policy in advance. Claims he is direct representative of Midland Casualty Co., Chicago, but they deny this.

"Do not permit him to get away if apprehended until Detective King, San Francisco police headquarters, is notified. Warrant out for him in San Francisco. This party may be working in Washington at present time."

Ohio Has a "Bad Check" Man.

The Ohio operator is reported by the Van Wert Garage, Van Wert, O., as traveling about the country in a Ford car accompanied by a woman. His method is to pay bills with checks made out on the Farmers State Bank at Albion, O. One check tendered to the Van Wert garage was returned by the bank with the following notation:

"We herewith return to you check of Orin Parminter as we consider it absolutely worthless. This party is a worthless check operator, having issued over $800 worth of these checks. Farmers State Bank, Albion, O."

No Cut in Transcontinental Freights.

The Interstate Commerce Commission has dismissed the complaint made by J. W. Leavitt & Co. and others against the Lake Shore & Michigan Southern and other railroads and declared the present rates on passenger motor cars in carload lots from Eastern territory to California terminals to be reasonable.

In the complaint it was pointed out that whereas the present rate on passenger motor cars varies from $2.30 to $3, the rate on freight motor cars varies from $2.70 to $2.50. It was contended that owing to the great increase in passenger car traffic the rates on these vehicles should be reduced. It was pointed out that whereas but 50 carloads of pleasure cars were shipped across the continent in 1904 the transcontinental shipment during last year amounted to 6,000 carloads, of which fully 90 per cent consisted of passenger cars. The commission rejected the complaint, however.

Sues 64 Grand Rapids Stockholders.

For the purpose of trying to recover more than $100,000 for the creditors of the bankrupt Grand Rapids Motor Truck Co., suit in chancery has been filed in Grand Rapids, Mich., against 64 stockholders of the defunct concern by the Grand Rapids Trust Co., trustee. The trust company claims that this sum is due on capital stock issued; it also holds that the unpaid balance upon the capital stock which was subscribed for or owned by any of the defendant stockholders and which balance amounts to the difference between the par value of the stock and the amount actually paid thereon, constitutes an equitable asset which is liable and should go to the creditors.

When the petition for bankruptcy was presented in the United States District Court in 1913, the schedule filed showed liabilities of $120,000 and a total of only $8,500 worth of available assets.

M. A. M. Takes in National Screw.

The National Screw & Tack Co., Cleveland, O., has been admitted to membership in the Motor & Accessory Manufacturers. The company manufactures screws, bolts, nuts, cotters, spokes, etc.

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The Subdealer Dodge as Means to Cut Prices

Reilly Declines to Appoint a "One Car" Dealer—Makes a Good Sales Sheet But a Poor Cash Report.

By Ray W. Sherman

Just as Tommy Trumbull went in Van Schenck went out. Tommy was taking his time about it, but Van Schenck was going at high speed. He had started from Reilly's desk and was going 7 miles an hour in 7 seconds from a standing start.

Tommy ducked back out of the way and let the runaway go by; he stood for an instant and gazed after the retreating form of the indignant Dutchman. The man of Hollandish ancestry was out onto the sidewalk and speeding down the street before Tommy took his eyes off him.

Then he resumed his journey across the salesroom floor and into the office. Reilly was still snickering as Trumbull made his entry.

The Flying Dutchman.

"Gee! But isn't he a mad Dutchman?" said Reilly.

"Mad? He's wild!" said Tommy. "If he gets any worse he'll have apoplexy. He's ready to bite somebody now. I bet there's froth running down his chin. What did you do to him, anyway?"

"Do? Nothing," answered Reilly, as he smoothed down the straggling thatch which was now and then ruffled by the purring fan. "That's the trouble. It isn't what I did; it's what I didn't."

"Van Schenck gone?" Charley, the senior salesman about the place, came in from the repair-shop and garage at the rear of the establishment and glanced furtively about.

"Gone in a blaze of glory," was Tommy's answer.

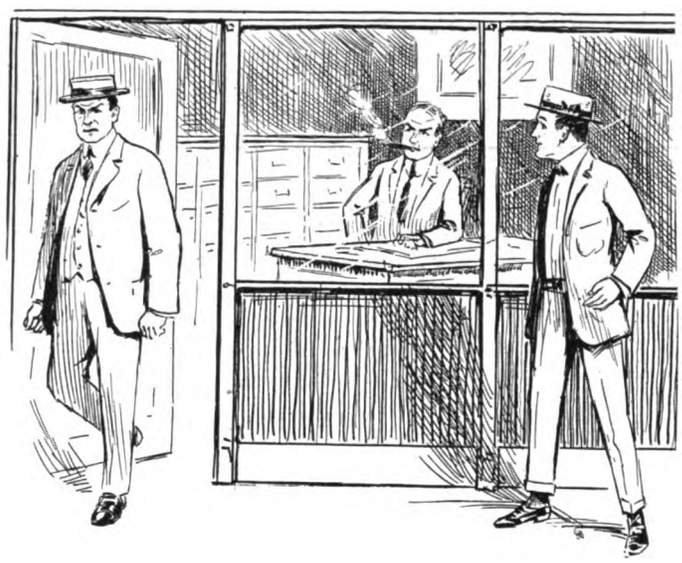
"That's fine! Fine!" exclaimed Charley. "He hates himself, that boy! I had to get out. He made me weary—very, very weary."

"What's the matter with him? What's the idea?" demanded Tommy, who knew nothing about what had gone on except that he had seen a very angry Dutchman dash out of the office door, through the salesroom and down the street as if he had been summoned home to join the army.

"He wants to be a subdealer," explained Reilly.

"Yes, that's all," added Charley.

"Oh, that's all, is it?" Tommy always grew very sore when Reilly and the Senior Salesman began this mysterious form of explaining.



TOMMY WAS TAKING HIS TIME BUT VAN SCHENCK WAS GOING AT HIGH SPEED—7 MILES IN 7 SECONDS FROM A STANDING START

"Aren't you looking for any more subdealers?" Tommy asked the boss.

"Subdealers? Oh sure! Can't get too many!" said Reilly.

"Oh!" said Tommy.

Charley tittered and Nellie, the Typewriter Chauffeur in the little cubbyhole office next door, rattled very noisily on her machine.

Subdealers But No Van Schencks.

"I want subdealers; lots of 'em," said Reilly, "but I don't want any Van Schencks."

"Aren't sore on the Dutch, are you?" asked Tommy blandly.

Reilly had been known to express opinions about certain nationalities and he got a bit red at this unexpected question.

"Not at all! Not at all!" he replied. "It isn't his nationality; it's his object in life that gets my goat."

"What does he want?"

"Mostly to get a car at less than list, as near as I can make out," vouchsafed the dealer. "He's been feeling around here for some time. And I have it pretty straight that he's been feeling around in other places along the Row. He pretends that he wants to be a subdealer, but subdealer is only his subtle way of getting a cut price on a car."

"How can you tell that?" Tommy wasn't trying to be impertinent; he really wanted information.

Gets Stuck Sometimes.

"I can't always tell," replied Reilly. "Sometimes I get stuck and fall for a guy like that. But this one I know I'm right on. I've got information right from his own home town."

"Yes."

"He lives down in Berrytown, which has about four or five hundred people, and from what I hear he has been anxious to own a car for some time. He also is anxious to pay as little as possible for it."

"Why doesn't he buy a cheap car?"

"That isn't what he wants," explained Reilly. "He wants a pretty good car and he has the money to pay for it, but he doesn't want to part with any more money that he has to. He's of a saving disposition.

"He's this pest that is known as a one-car dealer. He is one of the developments that have come with the growth of the business; he gets in his good work now and then, but everyone tries to snuff him out whenever he and his real object become known."

"One-car dealer?" questioned Tommy.

"Yes; he buys one car with the under-

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standing that it is a demonstrating car and that he is going to sell cars in the territory or village where he lives. He takes his 'demonstrating' car and drives away and that is about the last you ever hear of him. He certainly never turns in any contracts."

"Good scheme!" said Tommy.

"It's a beauty," admitted Reilly. "He saves himself two or three hundred dollars, and, until somebody gets wise to his graft, he saves money on all the tires, parts and supplies he comes after. But it isn't always a scheme on the part of the subdealer," continued Reilly. "Very often the dealer, distributer or branch manager who makes the deal is to blame for it. That has been one of the troubles with a whole lot of factory branches. The manager wanted to make a good showing and make the factory think the branch was doing a good business. It was a case of anything to boost the branch manager's stock—so he planted subdealers so thick there wasn't room for them to grow even if they wanted to.

Tried to Make a Book Showing.

"I know of one branch manager who was particularly fond of that plan. He kept his job for quite a long time on the strength of the showing he made with the factory, and from the looks of the reports he sent in the branch was prospering; but one day the factory management sat down and actually figured out where the branch stood and there was a lot of funny little things that were hard to figure out.

"One of the items that changed from a profit into a loss was a big warehouse full of used cars. The manager had traded at the slightest provocation and had turned in sales reports galore. Of course, the proceeds of each sale were some cash and a lot of car. When they came to turn the used cars into cash the way that branch's figures reversed themselves was something appalling."

"I think I know that branch manager," interrupted Charley.

"I wouldn't wonder but what you do," replied Reilly. "As I say, making trades was one of his long suits. The other was planting subdealers. He had them everywhere. He would get after a prospect and if it was likely to be a hard job he was quite likely to offer to make the man a subdealer. The man probably wasn't looking for any such job and would try to back out, but this manager would explain to him that all he had to do was to buy a car and thereafter keep his oyes open for people who wanted to buy cars. If he turned in the name of a man and if the man bought a car the so-called subdealer would get a small commission.

"Generally the buyer didn't give a hoot about being a subdealer, but he wasn't averse to getting a car for something off the list, so he would buy his would-be demonstrator and sally forth to have a good time with never a thought about prospects or car selling or anything else. He enjoyed himself at the expense of the company that ran the branch."

"Huh!"

Branch Records Fine on Paper.

"The records of this branch were excellent on paper," added Reilly. "When the company wanted to put a little ginger into the other branches the sales manager used to say that this branch had disposed of so many cars during the past month. The other branches never seemed to be able to equal this record.

"And try as they would they never could do it. The company never sent out a report saying what each branch had earned. I guess the big boss never thought of it. He was so impressed with the number of sales the branch was making. But this branch didn't sell the cars; it 'disposed' of them. It got them off the floor—which was the branch manager's main object in life.

"This branch manager—" Reilly turned around at Charley and Tommy to emphasize his remark—"this branch manager had subdealers within three or four blocks of his own store. He didn't give a hoot where a man lived or whether there were any possibilities of his getting one prospect during the course of his natural life."

"Which is worse?" asked Charley. "A man like Van Schenck, who tries to get himself appointed as a 'phoney' subdealer, or a man who appoints a 'phoney' subdealer for the sake of writing down the sale of a car?"

"I don't know," replied Reilly. "Some dealers, men in business for themselves, have kidded themselves along by appointing one-car dealers, but they must be crazy. The man who buys a demonstrator and gets to be a subdealer under me is going to sell a couple or three cars in the course of a year or he isn't a dealer."

One Language Not Enough.

"What made Van Schenck mad?" asked Tommy.

Reilly laughed. "I told him," he said, "that I would make him a subdealer if he would pay list for his demonstrator, and that if he dug up the leads on three sales in a year I would rebate him on the demonstrator and pay him his commissions on the sales. Then he got hot. He wanted to know what I thought he was."

"What did you tell him?"

"I told him I couldn't tell him; I don't speak more than one language."

Providence Dealers at Annual Outing

Parade With Demonstrators to Club Grounds—Day of Sports.

The Rhode Island Automobile Dealers' Association held its annual outing on Saturday last, more than 100 dealers turning out for a day of fun at the Pomham club. Prior to departing for the club the dealers, many of them in their 1915 demonstrators, formed in procession and paraded through the principal streets of Providence.

Over 50 machines were in line, many of them gaudily decorated and all flying the official pennant of the dealers' association. The procession formed on Francis street at the north of the depot. The machines passed through Dorrance street to Westminster, to Cathedral square, turning down Weybosset to Custom House to South Main. The cars containing the members and their guests then set off for East Providence and the club grounds.

Upon arriving at Pomham luncheon was served, after which a baseball game was played. At the conclusion of this field sports were held, which proved the feature of the outing. Charles F. Thatcher, president of the association, donated some valuable prizes for each event, and they were all closely contested. The program included the following events: Fifty-yard dash, three-legged race, standing jump, running broad jump, shoe race.

Among the officers and members of the association who participated were the following: President Charles F. Thatcher, Vice-president John O'Donnell, Secretary-Treasurer and Business Manager Percival S. Clark, Director William H. Fuller, William Hughes, Herbert E. Bradford, Walter P. Pierce, J. W. Breese, A. S. Hitchcock, Charles Barre, Herbert E. Bradford, Herbert E. Capron, B. S. Clark, Percival S. Clark, William H. Fuller, R. Higgins, B. F. and A. W. Hopkins, A. S. Lee, Ronald S. Longley, L. B. Lorimer, John O'Donnell, Charles K. Getchell, C. A. Sherman, E. A. Sontag, E. E. Whipple, Wallace L. Wilcox.

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Stages Five 200-Mile Tours to Open Season

Studebaker Dealer in Buffalo Arouses Wide Interest.

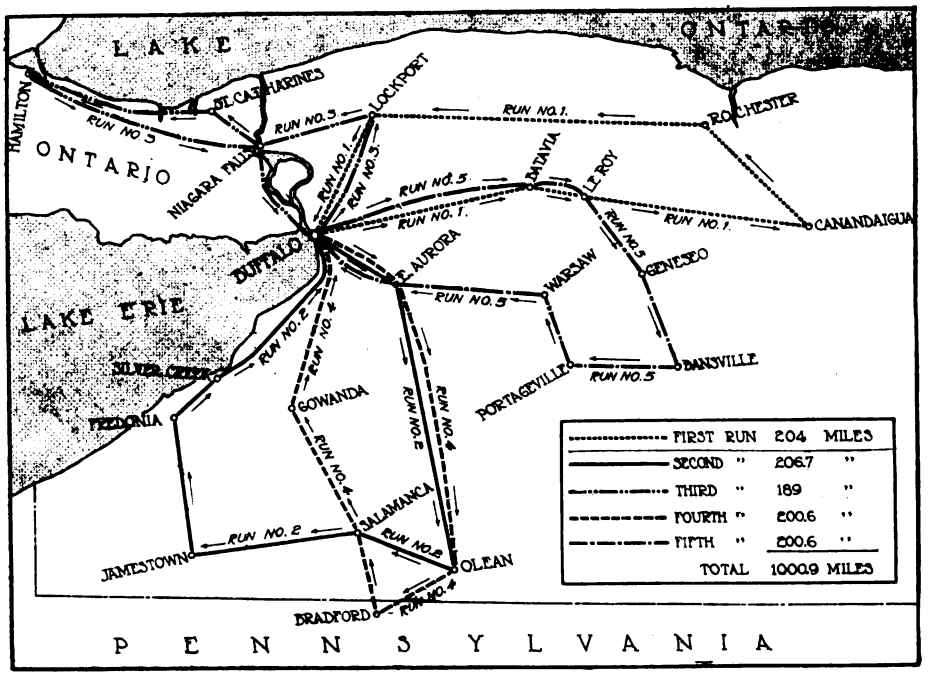
Carries Through Whole Plan at Small Expense.

The A. W. Haile Motor Co., which handles the Studebaker in and around Buffalo, N. Y., was selling five fours to one six; Haile wanted to sell more sixes. He conceived a plan, put it into execution and at the end of five weeks was selling six sixes to one four. He had achieved the desired result in a way that surprised even Haile himself.

This is how he did it:

He planned to make five runs of 200 miles each over different routes out of Buffalo, the runs to be held on each of five consecutive Sundays. Data was kept on each run—gasolene and oil consumption, kind of roads, grades, etc. Each run was observed by a reputable newspaper man and the friendship of all the newspapers was secured, valuable publicity being the result.

The results were—15.15 miles to the gallon of gasolene; 421 miles to the gallon of oil; 470 miles to the gallon of water; average cost per mile, $.0103; no punctures; no blow-outs; no added air; no mechanical adjustments during the 1,000-mile test. These and other figures are shown in the reproduction of an ad run by Haile at the end of the test. It was the only ad he ran, and while he values the publicity obtained at more than $1,000 the expense was small.



HAILE'S FIVE 200-MILE DEMONSTRATION RUNS OUT OF BUFFALO—HE COVERED HIS TERRITORY WELL

When the 1,000-mile test was started a large banner telling of the runs was stretched across the front of the salesroom at 1015-17 Main street. As each run was concluded a smaller banner was pasted on the window, telling where the car had gone and what it had done. This display drew much comment and caused many passersby to stop and read.

On the Sunday of each run after the first, the newspapers ran a story telling what had been done on the preceding run and stated that another run was being held on the day in question. These stories were a column or a column and a half in extent and were illustrated. The last story in the Buffalo Courier totaled 24 inches, whereas the only paid advertisement Haile used totaled but 15 inches—5 inches, 3 columns.

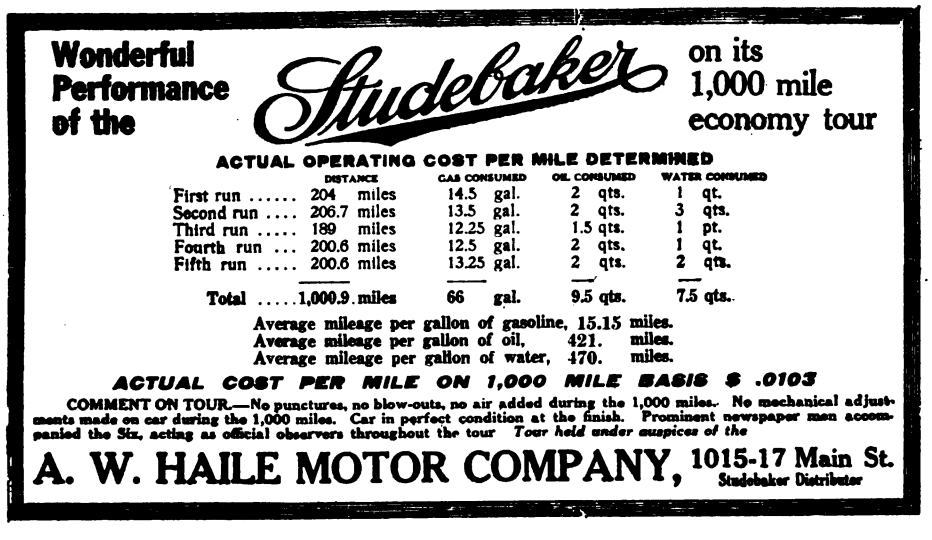
The cooperation of the newspapers had been assured beforehand, for before starting the test Haile took the matter up with representatives of each paper and took them into the plan. At the end of the test the newspaperman-observer wrote Haile a letter, testifying to the accuracy of the data, and this letter was reproduced and mailed to the prospect list.

"This tour is the best publicity or local advertising I have ever had, and the fact that it was new and that I carried it along for five consecutive Sundays gave me publicity and advertising which I could not possibly have purchased," said Haile.

"In reference to the amount of business obtained from this advertising and publicity, I can only say that we sold 20 Studebaker sixes during the time this run was in progress."

One of the most effective points in connection with the whole plan is that the runs were made over roads familiar to Buffalo prospects.

"Tests in Seattle," said Haile, "mean little to the people of Buffalo. What does mean something to them are tests on roads about Buffalo, the roads they will have to drive over after they buy a car and with which they are familiar." The routes, which are shown in an accompanying illustration, were furnished by the Goodrich Touring Bureau.



HIS ONLY EXPENDITURE FOR ADVERTISING—5 INCHES 3 COLUMNS

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Bigger and Better Body on 1915 Overland

Left Steer Adopted, and Car Built Lower

Chassis Changed in Minor Details Only.

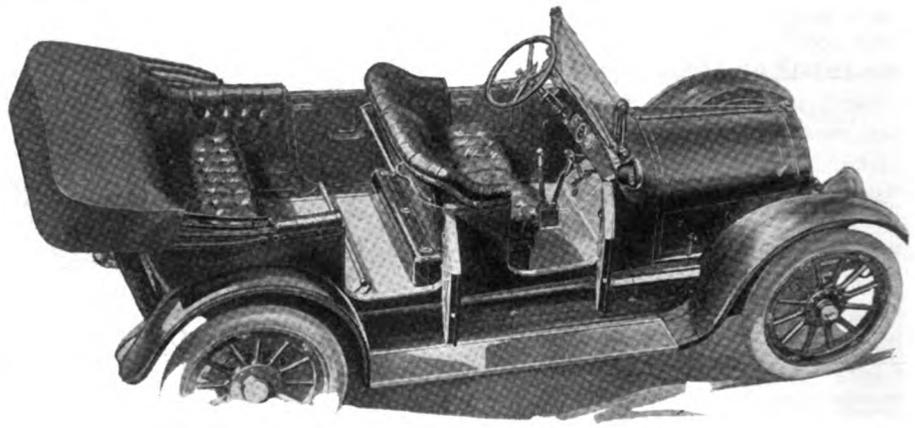
Model 80 Overland, which is the 1915 car built by the Willys-Overland Co., Toledo, O., is a continuation of Model 79, the 1914 model, with such changes as have been found advisable to bring the machine fully up to date. There will be no mistaking the car for anything but an Overland; but the body has been enlarged appreciably and for the first time the steering wheel has been placed on the left side. No change has been made in the prices, the touring costing $1,075, the roadster $1,050 and the four-passenger coupe $1,600.

OVERLAND MODEL 80 AS IT APPEARS FOR 1915.

Price, touring	$1,075
Roadster	1,050
Coupe, 4-passenger	1,600
Color	Brewster Green
Make of motor	Overland
Number of cylinders	Four
Shape	L-head
How cast	Singly
Bore	4⅛
Stroke	4½
S. A. E. rating	27.25
Magneto	Bosch
Carburetter	Schebler R
Starting-lighting	Westinghouse
Clutch	Cone
Gearset	3-speed
Wheelbase	114
Tires	34 x 4
Wheels	Wood
Steering	Left
Control	Center
Make of axles	Overland
Type of rear axle	Floating

Equipment: Top with cover and side curtains, two-part windshield, Westinghouse electric lighting and starting system, speedometer, horn, jack, pump and set of tools.

The enlargement of the body provides additional space in both front and rear compartments; the rear seat is now 45 inches wide and the front seat 40 inches wide, the backs are 19½ inches and 18 inches high, respectively, and both seats are 20 inches deep and tilted backward at a comfortable angle. The front seat is divided instead of being all one as in the 1914 model.



LEFT STEERING IS A NEW 1915 OVERLAND FEATURE

In all body styles the streamline effect is carried out and the frame, running-board brackets and battery box are concealed by sheet metal aprons which add materially to the looks of the car by imparting a long, low-hung appearance. As a matter of fact, this is not entirely a matter of appearance, for, owing to the redesigning of the front axle, the underslinging of the rear springs and the dropping of the frame, the body has been brought 3¼ inches closer to the ground than in Model 79. While the wheelbase has not been increased, remaining 114 inches, the tires are a little larger—34 x 4 instead of 33 x 4.

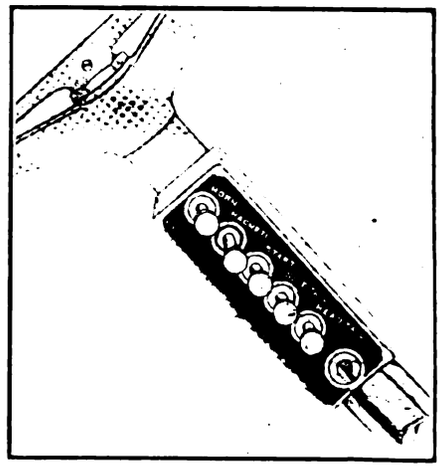
The equipment not only is complete but includes a new type of top which has its storm curtains stowed in a metal box directly back of the front seat. This arrangement makes it possible to put the curtains in place without disturbing the passengers in the rear seat. The leather straps which formerly held the top in place when folded have given way to a special clamp which holds the top securely and does not permit rattling.

All the doors are provided with leather pockets and are hung on concealed hinges; the latches are inside and are so placed that they will not catch the clothes of passengers leaving or entering.

The windshield is now built directly on the top of the cowl and is of the rain-vision ventilating type and has smaller and neater fittings than the 1914 type, the brackets being vertical instead of sloping. The curves where the hood joins the cowl and where the cowl merges into the body have been modified in accordance with streamline ideas, and the effect is decidedly pleasing.

The chief characteristics of the Overland power plant are exactly as they were, the L-head cylinders with bore and stroke of 4⅛ x 4½ and an S. A. E. rating of 27.25 being cast singly. The pistons are fitted with two double rings each and have two oil grooves below the pin. The piston pin bearing is bushed with bronze and the connecting rods are of the usual H section. The single casting of the cylinders permits the use of five bearings for the crankshaft, while the camshaft runs on three bearings. The valve tappets work in long guides in which they are closely fitted to prevent the leakage of oil.

Lubrication is effected by the almost universal constant level splash system with the oil circulated by a pump and an oil reservoir at the bottom of the crankcase. The oil runs from the pump to a sight feed on the dash and thence to a lead extending the length of the crankcase and feeding the splash troughs.



ELECTRICAL CONTROL ON STEERING COLUMN

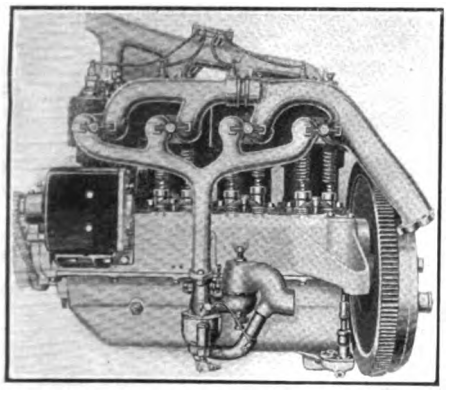
Ignition is by Bosch high-tension magneto mounted on a bracket at the right front end of the motor and driven through a leather coupling. The single system is employed because, at the speed at which the starting motor turns the engine, no auxiliary system is required.

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Gravity feed takes gasolene to the carburetter, which is the most recent design of the Schebler Model R, and has a double heated air intake by means of which both main and auxiliary air supplies are warmed. The primer, formerly mounted on the steering column, has been mounted on the cowlboard. In order to make sure that the flow of fuel will not be affected by any ordinary grade, the carburetter is hung exceptionally low.

In the Westinghouse starting-lighting system the motor and generator are separate units. The generator is mounted on the left side of the motor opposite the magneto and is driven from the crankshaft by silent chain. Battery charging commences at a car speed of 7 miles an hour; the maximum output of 14 amperes is reached at 18 miles an hour. Regulation of the current is effected by a compound shunt winding in the generator armature. The starting motor is series wound and takes current at six volts; it drives the gear meshing directly with the flywheel.

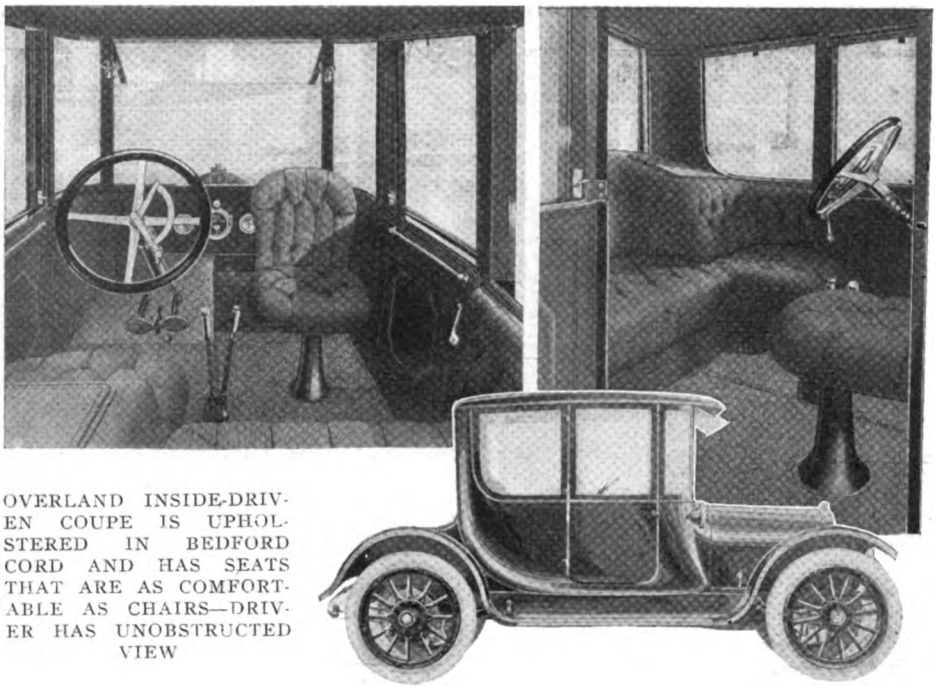
No change has been made in the cone clutch, which has a leather facing and is fitted with a brake. Neither has there been any change in the design or construction of the gearset, which is a unit



VALVE SIDE OF MOTOR, SHOWING GENERATOR

with the rear axle. A minor improvement has been made, however, by providing adjusting screws at each end of the secondary shaft. The gear ratios have been changed somewhat and now are as follows: First, 11 7/16 to 1; second, 6⅞ to 1; third, 3¾ to 1; reverse, 14¾ to 1.

At a thousand revolutions of the motor the car would travel 8.85 miles an hour on first, 14.65 miles on second and 27 miles on third. The propeller shaft is of cold-rolled steel, high forging stock, and is enclosed in a torque tube flanged at the rear end and bolted to the gearcase; the front end is forked and is flexibly supported by a cross member of



OVERLAND INSIDE-DRIVEN COUPE IS UPHOLSTERED IN BEDFORD CORD AND HAS SEATS THAT ARE AS COMFORTABLE AS CHAIRS—DRIVER HAS UNOBSTRUCTED VIEW

the frame. But one universal joint is used in the drive line and this is located at the front end of the propeller shaft.

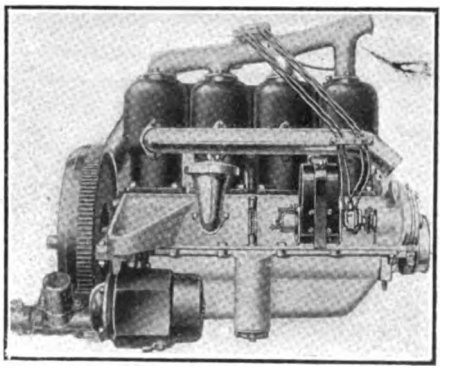
Overland practice is followed in the use of a floating rear axle carried on Hyatt bearings. The outer bearing is mounted on the outside of the axle housing. Thus the live shafts do not carry the weight of the car, their only duty being the transmission of the driving torque.

The use of a larger and roomier body has necessitated considerable change in the spring construction. The underslung rear springs, while of the same shape as those on Model 79, are longer and wider, being 48 x 2 instead of 42 x 1¾. No changes have been made in the brakes, which are 13 inches in diameter. The new front axle has Timken tapered roller bearings on the steering spindles. The steering gear, while moved over to the left side, has not been changed in any other way, remaining an adjustable worm and nut bolted to the side of the frame.

The front axle is new. It is a drop forged I-beam. The steering knuckle spindle is fitted with Timken taper roller bearings.

Several improvements have been made in the control system in addition to the carburetter primer already referred to. The gear-shift lever is centrally placed in agreement with the left-hand location of the steering wheel. Electric control is centered in a switch box of long and narrow shape attached to the steering column just below the wheel. The electric lights in various combination, the electric horn and the ignition are controlled by the driver's fingers without changing his position. A button on this keyboard must be pressed before the starter pedal is operated, which precludes the possibility of the too rapid pressing of the starting pedal. The action of the button is to throw the starting gear into mesh; the pedal switches on the full current.

A muffler cutout is operated by kick, and the accelerator is of new design; a side rest eliminates prolonged strain on the foot. In the case of the coupe model the pedals are adjustable. A new instrument on the cowlboard is the oil feed indicator in which a small vertical wheel operated by the oil continues to revolve even when the quantity of oil

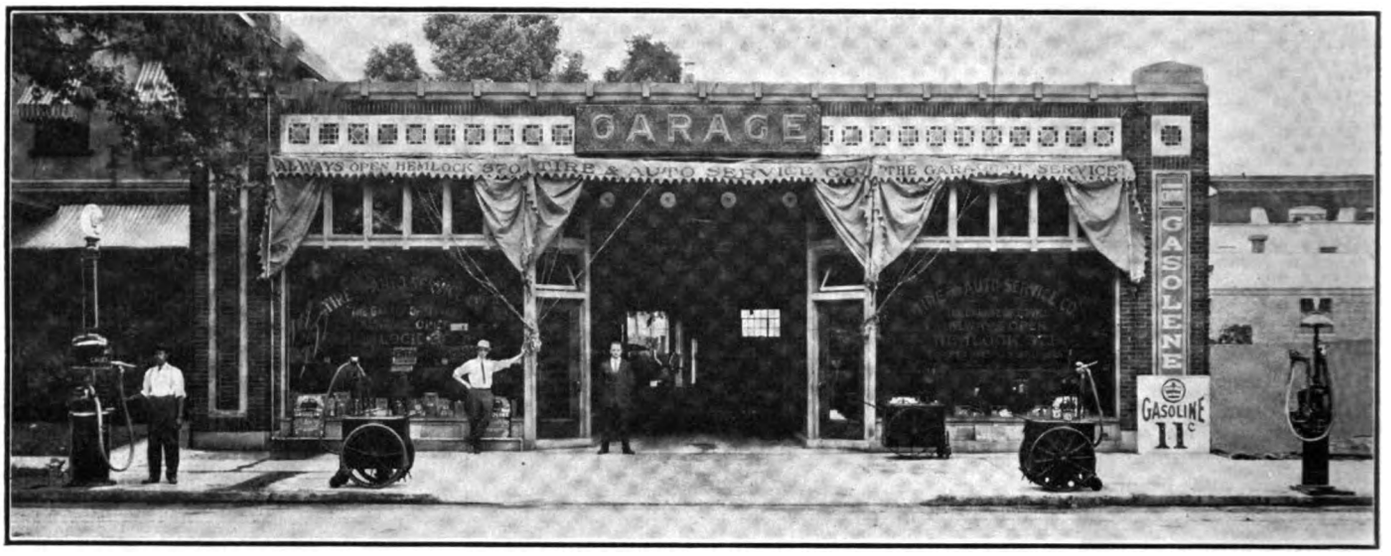


STARTER AND MAGNETO SIDE OF MOTOR

passing is so great that it would completely fill the ordinary sight feed.

The chassis is the same in all models and the equipment is the same in all cases except that of the four-passenger coupe, in which the tires, instead of being 34 x 4, as in the lighter cars, are 35 x 4½ and are of the non-skid type front and rear.

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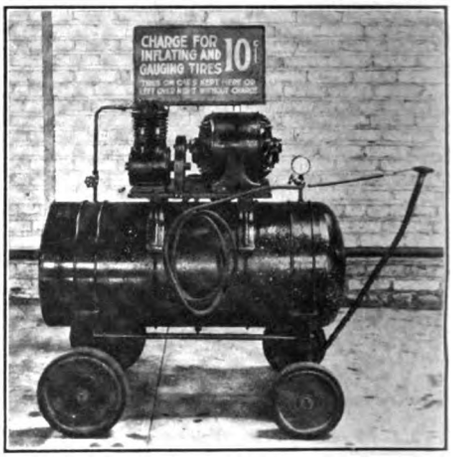
AIR AND GASOLINE ARE SUPPLIED AT CURB—EVERYTHINGS LOOKS, AND IS, BUSINESSLIKE—MAN IN DOOR IS WINLO

Gives Service But Gets Legitimate Profit

Detroit Garage Company Dispensed With "Free Air" —Put Business on a Business Basis—Is Growing.

The Tire and Auto Service Co., 2130 Woodward avenue, Detroit, is in no sense in business for its health. It has been among the foremost to recognize the fact that in order to make money in the garage end of the business the **cents** must be carefully watched. To this end Winlo, and his partner, Orr, have figured out several details which, while meeting the approval and appreciation of customers, at the same time add to the possibilities for profit.

The Brunner Co., pump manufacturers, sold the Tire and Auto Service Co. two portable air pumps and then wrote and offered to furnish two "free air" signs. These were declined, the proprietors of the Tire and Auto Service Co. stating that they had already secured two signs reading, "Tires Pumped and Gauged, 10 Cents." The pump manufacturers wrote back that they were mighty glad to run across one garage which had the nerve to do the right thing and charge for the use of a piece of equipment that cost money to own and operate.

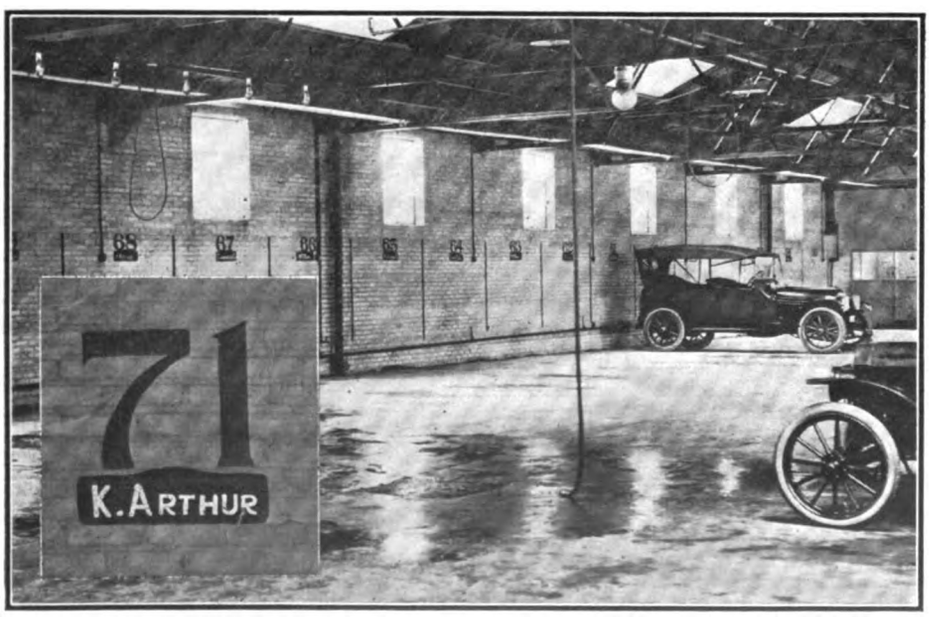


AIR IS CARTED TO THE CAR AT THE CURB AT 10 CENTS A TIRE

That was about January 1, 1914. Since that time the two pumps have been in service every day and the plan has worked successfully.

"It was just this way," said Winlo. "We had nothing in the way of experience of others to go by, but we made up our minds that we would give people service to the limit, but there was no use giving it unless we got something for it. We had formerly tried the regular plan of 'free air,' but we could not see where we were getting anything out of it.

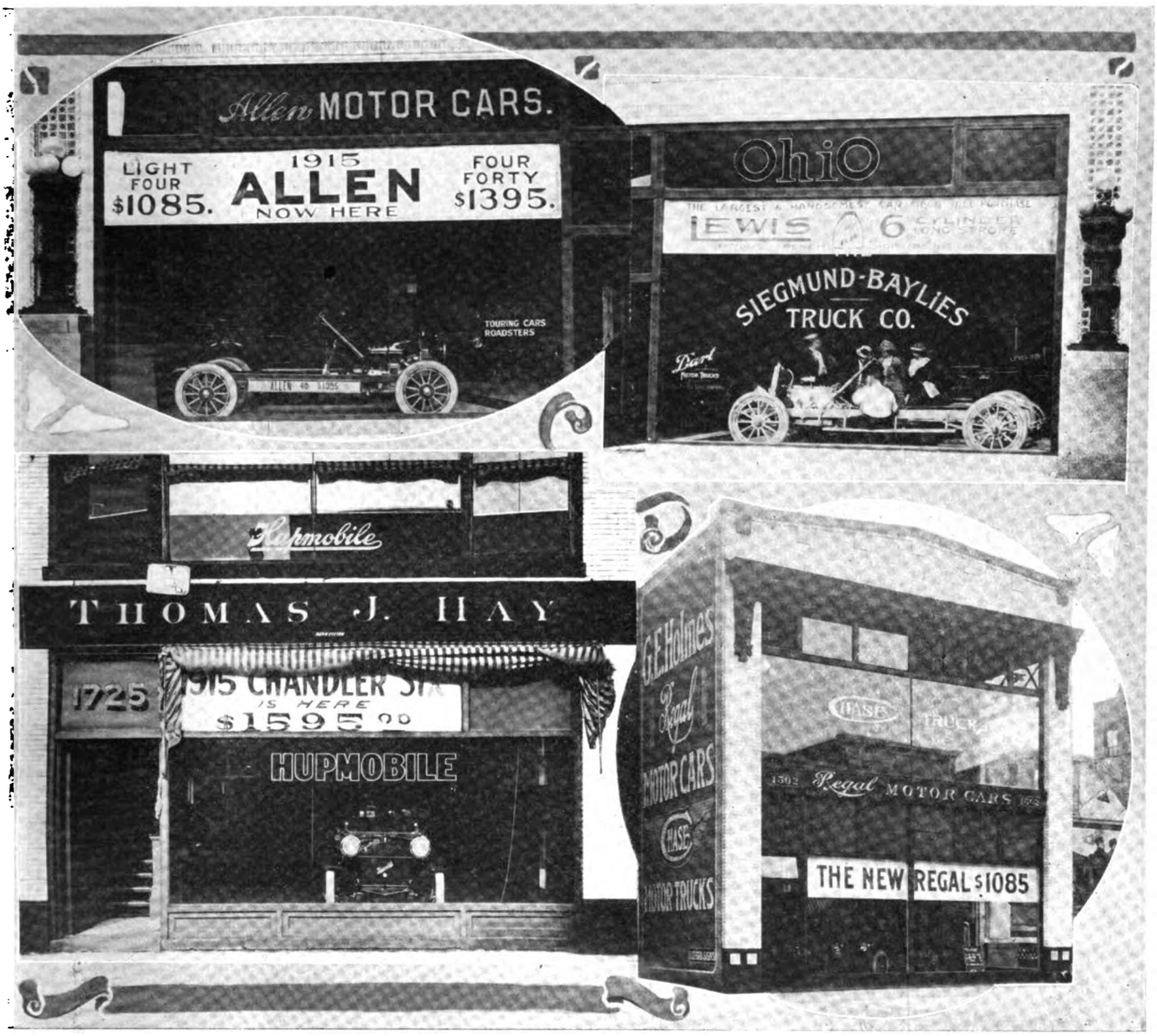
"People came in, four or five cars at a time, crowding the passageways, and had their tires blown up and gauged, and perhaps they gave the man who waited on them a tip of a quarter or a dime—and the man got it and was happy—but we, who paid the man's wages and furnished the equipment and the air, got



EVERY CAR STORED HAS A SPACE WITH NUMBER AND NAME OF CAR OWNER—CONFUSION IS AVOIDED—AT LEFT, ENLARGED VIEW OF NAME AND NUMBER

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Chicago Dealers Use Signs to Announce New Cars



SOMETHING UNUSUAL IS REQUIRED AT THIS CRUCIAL POINT OF THE DEALER'S YEAR AND A STRIKING SIGN IS MUCH UTILIZED BY DEALERS WHEN THE FIRST OF THE NEW CARS ARE RECEIVED

nothing. We could not see where any tire sales were being made because of our free air—and we did know that it was costing us money. We maintain that we still give **free** air—we simply charge for the service.

"Our new plan does not make us any big wads of money, but it pays for the wages of the men who operate the air-buggies and it pays about 6 per cent on our investment—the buggies cost $225 each—and that is certainly more businesslike than losing money, isn't it?" And Winlo smiled.

This garage, which is continually being scrutinized by its proprietors for inefficiencies that they may be turned into efficiencies, is the first in the country to install one of the Bowser five-gallon unit pumps. This pump stands at the curb. It shoots five gallons at a time. And it fills a tank mighty quick. Of course, there is a one-gallon pump also and there are two gasolene buggies inside the garage.

"The gasolene business is peculiar," said Winlo. "At our garage it is practically all done two days a week. Saturdays and Sundays are the two days when people fill up their cars and business comes with a rush. Just think! Two days a week for five months—and a profit of one cent a gallon! You have got to sell some gasolene in order to make it pay. We sold 20,000 gallons in May, 27,000 in June and will sell over 40,000 gallons in July. We sold 12,000 gallons yesterday. We have the facilities for serving people quickly—and that's what they like. The 'buggies' enable us to fill up the cars of our regular customers inside without interfering with the rush of transients."

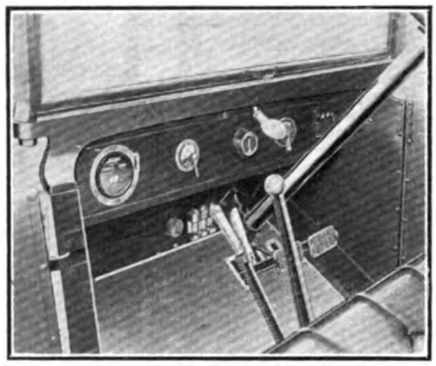
Another stunt that the Tire and Auto Service Co. performs for its customers is inflating their tires, gauging them all round and giving them whatever additional air is needed every night. When a man comes around in the morning he does not have to wait and fume and waste precious time while his tires are being attended to. This is part of the regular service, and no charge is made for it, just as no charge is made at any time for inflating the tires of a regular boarder. The customer does not have to give instructions; things are done for him.

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1915 Empires Have Starter

Both Touring and Roadster on One Chassis—One Price for Both Models.

In bringing out its 1915 line the Empire Automobile Co., Indianapolis, Ind., has continued its policy of building a single chassis carrying roadster and five-passenger touring bodies. The price $975, which is the same for either type of body, includes Remy lighting and starting system, which, however, may be omitted, when the price will be $100 less, or $875. The price of the 1914 car was $850, but this did not include electric lighting and starting. When electrical equipment is not specified standard equipment is furnished.

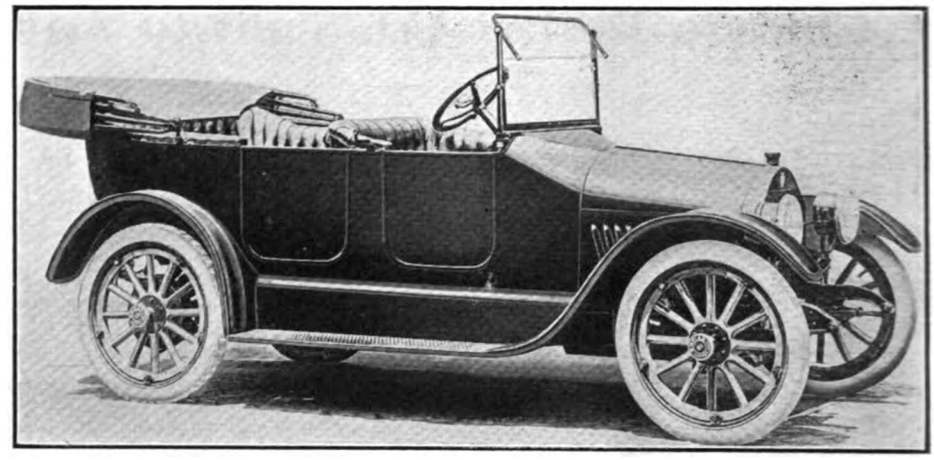


COWL BOARD AND INSTRUMENTS

MAIN POINTS OF EMPIRE LINE FOR 1915.

Price, touring or roadster	$975
Number of cylinders	Four
Shape	L-head
How cast	Block
Bore	3¾
Stroke	4½
S. A. E. rating	22.5
Magneto	Remy
Carburetter	Holly H
Starting-lighting	Remy
Clutch	Disk
Gearset	3-speed
Wheelbase	108
Tires	28 x 3½
Wheels	Wood
Steering	Right
Control	Center
Type of rear axle	Floating

Equipment: Mohair top with cover and side curtains, Stewart speedometer, Remy electric lighting and starting system, horn, jack, robe and foot rails and full set of tools. When electric lighting and starting are not included, acetylene headlights, Prest-O-Lite tank, and oil side and tail lights are supplied.



THE LINES OF THE BODY HAVE BEEN MADE MUCH SMOOTHER

Standard equipment consists of a new type of mohair top, with cover and side curtains, Stewart speedometer, horn, jack, pump, robe and foot rails, and full set of tools. When the Remy electric lighting and starting system is not on the car acetylene headlights are fitted and supplied with gas from a Prest-O-Lite tank and an Eisemann high-tension magneto takes the place of the Remy ignition system; side and tail lights are oil.

The power plant is of the unit type, having a four-cylinder, L-head motor with block-cast cylinders. The bore and stroke are 3¾ x 4½, and the S. A. E. rating is 32.5. Cooling is by a thermo-syphon system; the water passages are large and free and there is a large fan behind the radiator. Splash lubrication is employed, the oil being circulated by a gear-driven pump and passing through three sight feeds on the dash. The carburetter is a Model H Holly, adjustable from the dashboard.

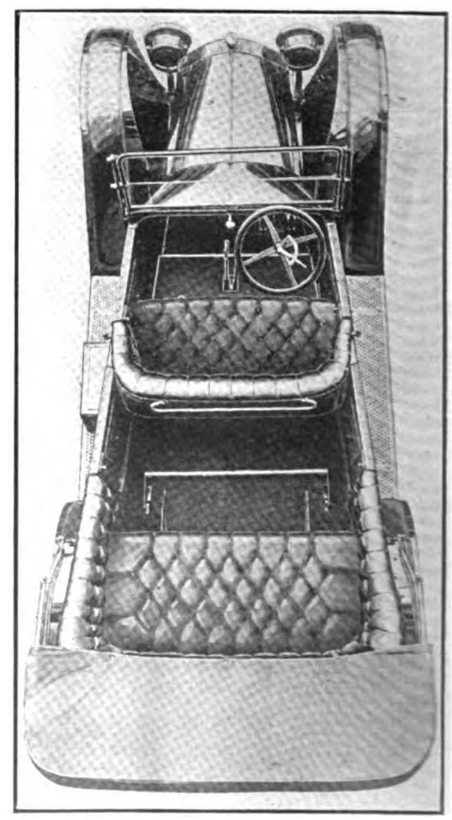
Between the engine and the gearset and enclosed in the housing which makes the two a unit is the multiple-disk clutch running in oil. The gearset is the usual three-speed type with selective control and drives through an enclosed propeller shaft to the rear axle. A single universal joint is located at the forward end of the propeller shaft.

Both front and rear axles are of Weston-Mott make, the latter of the semi-floating type. Brakes are of the usual external contracting and internal expanding types, operating on 12-inch drums. The front springs are semi-elliptic, and the rear springs three-quarter-elliptic with scroll ends; the frame is dropped to lower the center of gravity of the car.

The frame is parallel from end to end and is well braced by gusseted cross springs, the rear cross frame and its gussets being particularly heavy because they are called upon to carry the sections of the springs. Two forward cross frames carry the motor.

Wheels are of wood and are shod with 28 x 3½ tires on detachable demountable rims. The upholstery throughout the car is of Turkish leather. The body is of flush design. All door hinges are concealed. A cowlboard carries all the instruments—speedometer, battery indicator, ignition switch, lighting controls, carburetter adjustment, etc. The starter button, of the plunger type, is on the dashboard.

In the electrically equipped models the Remy single unit system is installed, which takes care of starting, lighting and ignition. The storage battery is a Willard, and it, as well as the balance of the electrical installation, has been adapted to the requirements of the car.



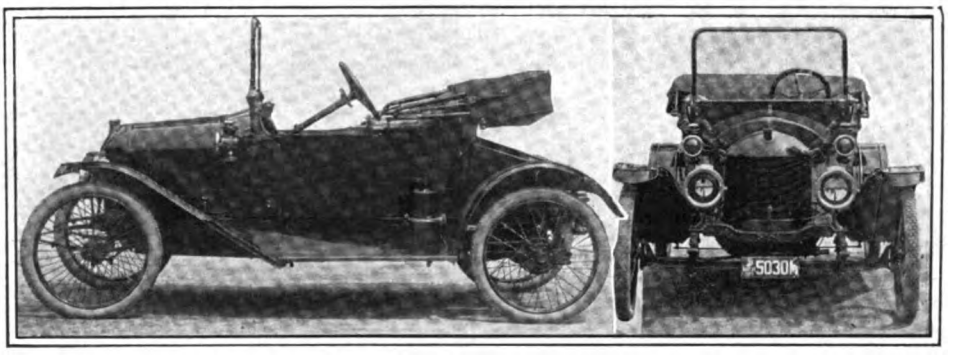
BOTH SEATS HAVE BEEN WIDENED

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Grant Light Car Price for 1915 Cut to $425

Numerous Improvements Despite Reduction.

Little Roadster Built on Big Car Lines.



GRANT LIGHT CAR WHICH SELLS FOR $70 LESS THAN LAST YEAR

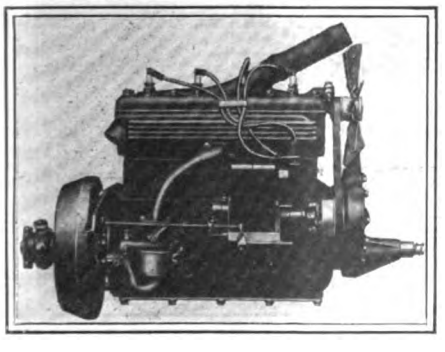
The chief change in the Grant car for 1915, the product of the Grant Motor Co., Findlay, O., is in the price, which has been reduced from $495 to $425. The machine is built in a single model with 2-passenger roadster body and is essentially a light car, though the tread is the standard 56 inches. For an extra consideration of $80 the machine will be fitted with Allis-Chalmers electric lighting and starting system.

SPECIFICATIONS OF GRANT LIGHT CAR OF 1915.

Price, roadster	$425
Color	Red gear, black body
Make of motor	Grant
Number of cylinders	Four
Shape	L-head
How cast	Block
Bore	2¾
Stroke	4
S. A. E. rating	12.1
Magneto	Swiss
Carburetter	Mayer
Clutch	Cone
Gearset	2-speed
Wheelbase	90
Tires	28 x 3
Wheels	Wire
Steering	Left
Control	Center
Type of rear axle	¾-floating

Equipment: Top with cover and side curtains, windshield, speedometer, gas headlights, Prest-O-Lite tank, oil side and tail lights, horn, jack, pump and full set of tools.

Notwithstanding the small size of the Grant, it is equipped as fully as the standard large machine, having top with cover and side curtains, one-piece windshield, speedometer, gas headlights, Prest-O-Lite tank, oil side and tail lights, horn, jack, pump and full set of tools. When the electric lighting-starting system is employed the gas and oil lamps are omitted.



MAGNETO SIDE OF BLOCK MOTOR

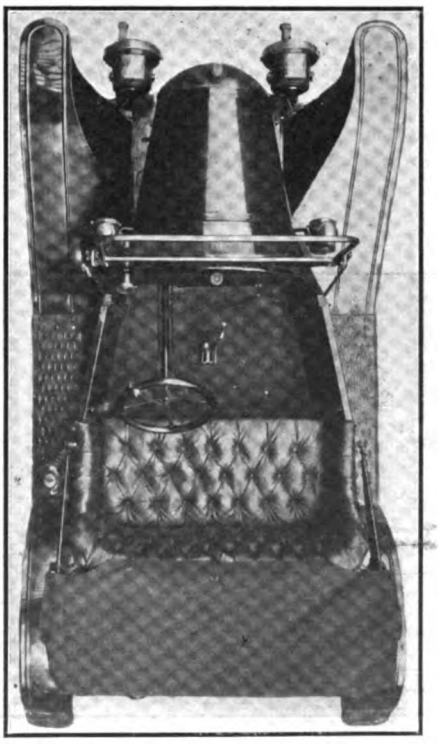
The motor is built in the Grant factory and has four cylinders cast in a block with L-heads and a bore and stroke of 2¾ and 4; the S. A. E. rating is 12.1. The top of the motor is covered by a removable plate which gives access to the cylinders and pistons. Another removable plate in the crankcase permits the adjustment of the crankshaft and connecting rod bearings. All the bearings, as well as the cylinders, are lubricated by splash, a constant level of oil being maintained in the crankcase by an automatic gravity feed.

The Mayer carburetter, on the right side of the motor, is hung as low as possible to insure a positive gravity feed from the tank which, contains six gallons and is located in the cowl. Ignition current is generated by a Swiss high-tension magneto carried on a bracket at the front of the motor on the right side. Cooling water is circulated by thermo-syphonic action.

The gearset is mounted as a unit with the rear axle and is of the two-speed type. The connecting links between the engine and the gearset include a leather-faced cone clutch, an enclosed propeller shaft and a universal joint between the clutch and the shaft. Gears and shafts are of hardened and browned alloy steel and are carried on roiler- and ball-bearings. The rear axle is of the ¾-floating type on roller-bearings throughout, and carries the weight of the car on the housing. The gear ratio of the rear axle is 4½ to 1.

Both sets of brakes operate on drums on the rear wheels; the foot brake is external contracting and the emergency brake, operated by the usual lever, is internal expanding. Brakes are lined with asbestos fabric. The front axle is a drop forging of the customary I-beam section with hardened and ground steering knuckle pins. Front wheels are mounted on ball-bearings. The spring suspension system is a little unusual in that full-elliptics are used in the front and a single semi-elliptic cross spring in the rear. The road clearance of the car under normal load is 10 inches. The frame is of pressed steel; steering is by pinion and gear.

Wire wheels are used, and are shod with 28 x 3 Bailey tread tires. The wheelbase is 90 inches and the tread 56 inches. The body is sufficiently large to comfortably accommodate two passengers, and is of a modified streamline design with a rounded radiator and a cowl of moderate depth. The weight of the car is given as 1,075 pounds.



BODY HAS AMPLE ROOM FOR TWO

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WIDE-AWAKE MERCHANDISING

CREATE "ATMOSPHERE" WHEN NEW CARS REACH SALESROOM

Detroit Dealers Work in Boxwood Trees and Flowers and Dress Up Salesroom So It Gets Attention—The Plan Was Simple and Not Over-expensive.

When the Bemb-Robinson Co., Detroit, put the 1915 Hudson car on exhibition the proprietors spent a little money to create an unusual atmosphere about the exterior of their store and thus draw attention of the thousands of passersby to the fact that something unusual was taking place inside.

Was a Novelty in Detroit.

In New York and many of the exceptionally large cities boxwood trees placed decoratively along the front and at the curb are not rare. But in Detroit no one had ever done such a thing, least of all a motor car dealer. The man driving past the Bemb-Robinson store involuntarily paused to see what was up. And then his eye caught sight of the gilt triangle in each window, with the easily understood figures "1915," and he knew instantly that the 1915 Hudson was on exhibition.

If he didn't, there was a big sign in the last window where Bemb and Robinson announced their "attractions," conveying the story in brief but unmistakable language. Note the emblematic gilt horseshoe with the cabalistic figures emblazoned thereon; the Italian garden effect secured by a not extravagant expenditure over the marquee.

Do you think anyone would pass this store by on a street conspicuous for the plainness of its stores? The cost was not excessive nor the outlay extravagant. The potted boxwood trees were rented for a period of four weeks from a local florist by payment of a nominal sum. The boxes over the marquee cost not over $40. And the triangles, made of bark-covered wood and gilded, with figures suspended in the center by means of fine wire, cost only a couple of dollars each.

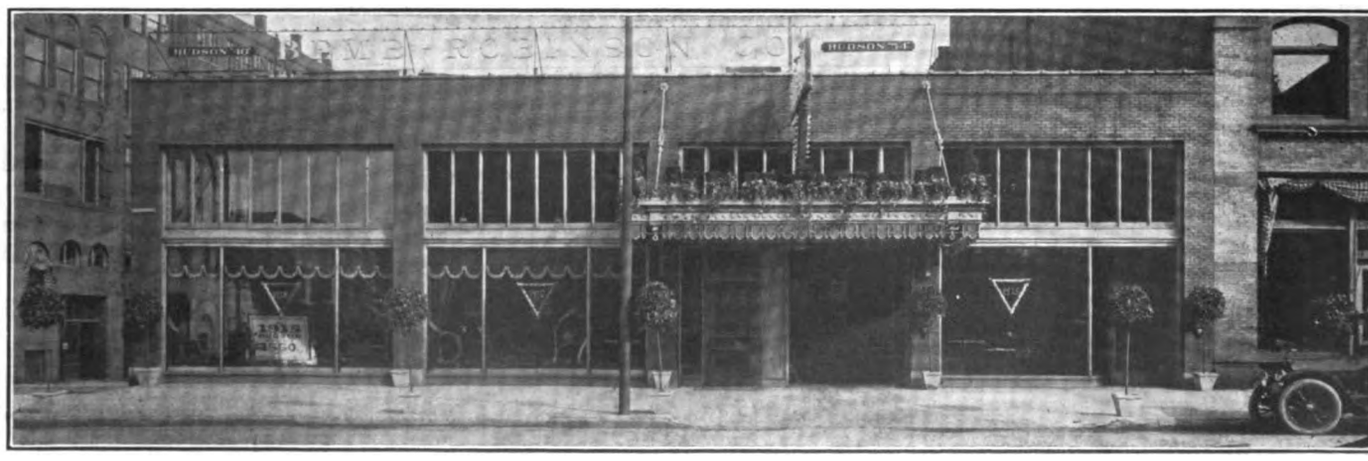
Any florist can duplicate a similar design and there is no reason in the world why dealers at other points selling other cars should not strive to capture public attention by copying these ideas which have proved so resultful for the originators.

How are you drawing attention to your 1915 cars? If you have any good ideas let other dealers share them. The whole trade benefits by the interchange of ideas and information. Send them in.

THE SUCCESSFUL SALESMAN, WHAT IS YOUR DEFINITION?

The analysis of a successful Red Top salesman, as I see it—is the man who will size up the buyer quickly—tell his story dwelling chiefly on the main selling points. Then have in mind chiefly the main selling points of your competitors and play up the points where your proposition is strongest in comparison.

At this point most salesmen fail to commit the buyer—or to ask the question, "So far as we have gone, don't you think our proposition is better than any other, and if not, why?"—William H. Rankin.



THIS IS THE FRONT OF THE BEMB-ROBINSON PLACE OF BUSINESS AS THEY DRESSED IT UP TO GIVE THE PROPER SETTING TO THE NEW HUDSONS—NOTE ALL THE LITTLE FLORAL TOUCHES AND THE CURTAINS AND SIGN IN THE WINDOWS

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BOSS A MODEL FOR EMPLOYES

And the Smaller the Organization the More He Is Copied.

It is a mighty large-sized responsibility that rests on the man who heads an institution, even though that institution be comparatively small and consist in the management of only seven or eight employes. Indeed, one man remarks that it is infinitely harder to be the head of a comparatively **small** organization because the opportunities for setting a wrong example are so much greater.

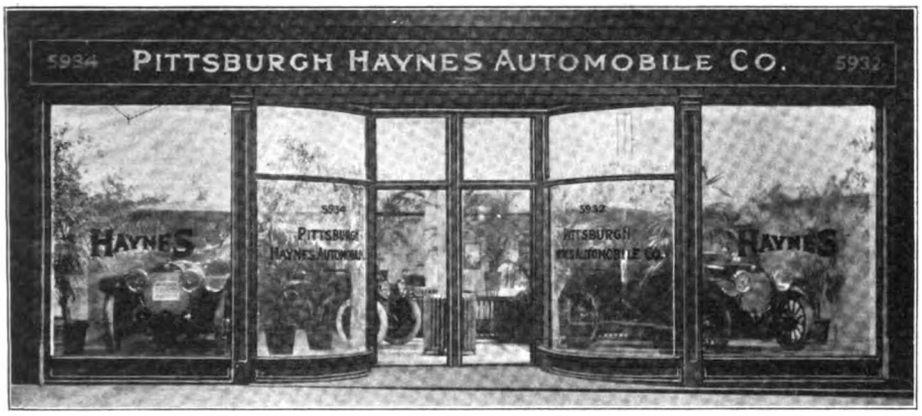
Why? Because in a small group of men every one of them gets closer to the boss and observes his weaknesses and takes advantage of them.

The head of a large institution, with plenty of subordinates may set the standards and start the wheels going and disappear and no one knows or cares very much where he has gone. His influence and ideals are felt and carried out by his efficient lieutenants. If he takes a day off, or a week, or two weeks, or even a month off, it rarely causes comment. If he fails to show up before ten no one else uses it as an excuse to be late. In other words, he does not at any time approximate the concrete personal influence and example that falls to the lot of the small dealer who is in daily, yes, hourly contact with his employes.

So when the head of a small business realizes that because he is late every morning, every one of his six or seven employes is likely to be late also, he begins to see that his errors and mistakes instead of being single are likely to be multiplied by the number of employes he maintains. If **he** plans his work with purpose and definiteness the rest of the "boys" are likely to do the same.

But if he works on a take-what-comes basis, without any head or tail to his plan, he is liable to cost the business a pretty penny. For the employes, even though faithful and loyal in intent, are almost certain to shape their methods by those of their "boss." And without citing any more examples and the possibilities involved, it is quite evident that a realization of this on the part of many dealers would mean a decided revamping of personal habits and methods.

Of course there are two sides to every proposition, and it is only fair to say that good examples set by good bosses are just as likely to bear fruit. So that one who is entrusted, whether by himself or others, with managerial responsibility is quite apt to reap exactly what he sows. Those who are managers now as well as those who hope and expect to have managerial cares thrust upon them will do well to ponder on the situation and plan accordingly.



WHEN THE LIGHTS WERE ON AT NIGHT THE INTERIOR OF THE PITTSBURGH HAYNES SALESROOMS WERE STRIKING—PALMS AND FLOWERS WERE USED

GET HABIT OF DOING IT NOW

Putting Off Never Got Anyone Anything He Wanted.

The word procrastinate comes from two Latin words meaning "for tomorrow." It is linked in the mind with such words as loafer, drone, dawdler, laggard and with such phrases as "asleep at the switch," "taking it easy," and so forth. It is the great American enemy. It is especially the foe to ambition and success. It is not only the thief of time as commonly reported, but also the stultifier of ambition.

Repeated procrastinations slowly but surely kill the seed of activity. Thus history is full of examples of men who fell short of being great simply because they put off doing till "tomorrow." And life itself is constantly reminding us that action, quick, decisive, immediate, is the fundamental rule back of all progress.

Salesmen who steadily and persistently crush this common tendency to defer, to put off, to let the grass grow under one's feet, will find that the habit of "doing it now" has an intensely profitable significance.

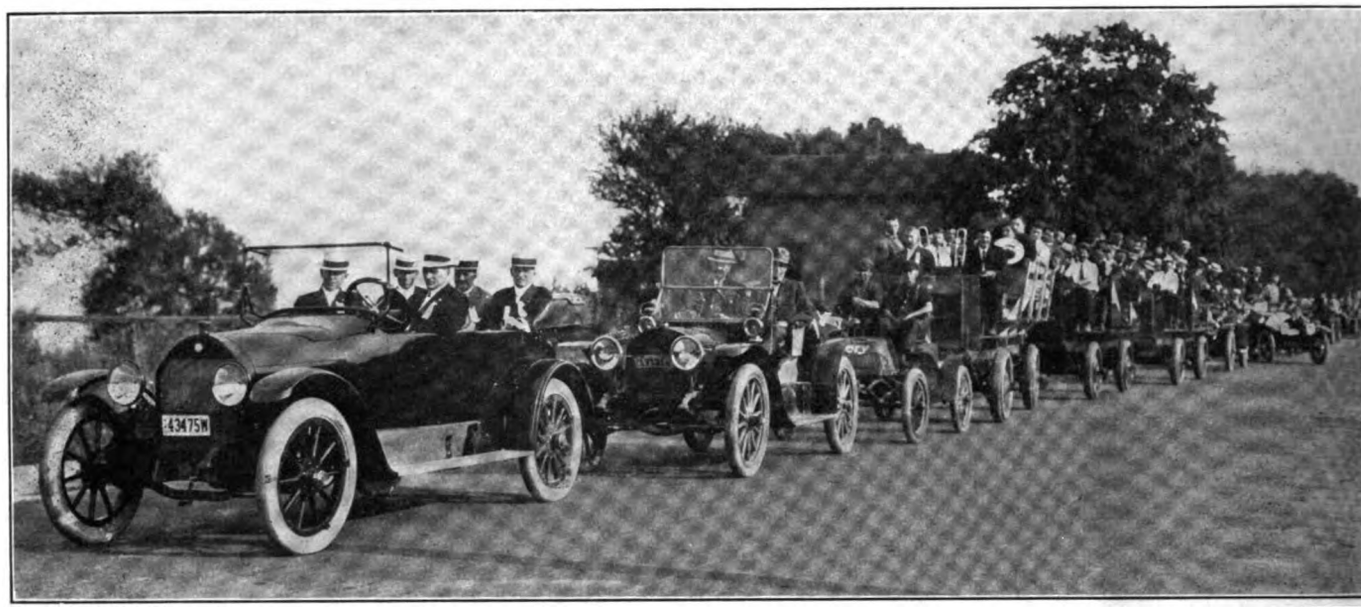
Pittsburgh Knew When Haynes Arrived.

Two pictures on this page illustrate the manner in which the Pittsburgh Haynes Automobile Co., 5932-34 Baum boulevard, Pittsburgh, Pa., worked a decorative scheme into its selling plan. H. S. Morrow is president; A. Hughson secretary and treasurer, and J. E. MacDougal sales manager.



DECORATIVE WORK LIFTED THE SALESROOMS OUT OF THE COMMONPLACE AND ADDED A TOUCH WHICH COST LITTLE EFFORT BUT WHICH MEANT MUCH

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CHESTERFIELD SIX HEADING THE PROCESSION OF 60 CARS IN THE PARADE—ORIGINAL SINGLE CYLINDER RAMBLER IS THIRD

Jeffery Factory Invaded by 300 Dealers

Representatives From Four Corners of the Country Listen to Talks on Chesterfield Six and Quad Truck.

Nearly 300 dealers in Jeffery cars gathered at the plant of the Thomas B. Jeffery Co., Kenosha, Wis., for a two-day convention, held August 6 and 7.

The first day was devoted to discussion and sales talk on passenger cars and the second, occupying most of Wednesday, was set aside for commercial car talks and a lecture on the Bijur cranking and lighting system used on the Jeffery Chesterfield six.

The 300 dealers came from all corners of the United States as guests of the company, and all the hotels in Kenosha, as well as a number of private residences, were thrown open to the dealers. The Jeffery company engaged a large Chicago caterer to furnish meals for the dealers, and the factory show room was converted into a dining room. There was nothing lacking in the cuisine, everything necessary for the complete enjoyment of the men having been supplied by the company.

On Tuesday the men assembled in the convention hall, which ordinarily is used as the used car department. H. C. Hill, assistant sales manager of the company, acted as chairman and introduced Assistant General Manager L. H. Bill, who spoke for some time on the birth of the Jeffery Chesterfield and how European practice had been incorporated in the car.

He impressed the dealers with his talk on the amount of time, energy and money spent in developing the new six, and told how Jeffery engineers had gone to Europe to make a study of practice there, so that the Chesterfield would be a representation of the best engineering construction in the world. He stated the Jeffery company introduced the high-speed motor in its four, and the speaker spent considerable time going over a four chassis which was in the room. Mr. Bill mentioned the motor's performance in the Jeffery quad, a four-wheel drive truck of the company, as typifying the ability of the little engine. This completed the morning session.

In the afternoon, E. S. Jordan, advertising manager of the Jeffery company, kept the men interested by outlining the



THE MILWAUKEE "BUNCH" AS IT APPEARED IN COSTUME IN THE PARADE DURING THE CONVENTION

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WHERE THE DEALERS TOOK TURNS IN PUTTING THE CAR THROUGH ITS VARIOUS PACES

sales policy of the organization. After Mr. Jordan's speech the entire 300 men started on parade in 60 Jeffery cars, the procession being led by the new Chesterfield six. Behind it followed one of the first cars brought out by the company, the Model C Rambler, a one-cylinder affair. The 60 cars, after passing through Kenosha, started for a trip to Racine. In the evening, dinner was served at the plant and later a special performance was staged at the Rohde opera house, this being followed by the serving of a luncheon at the Elks Club.

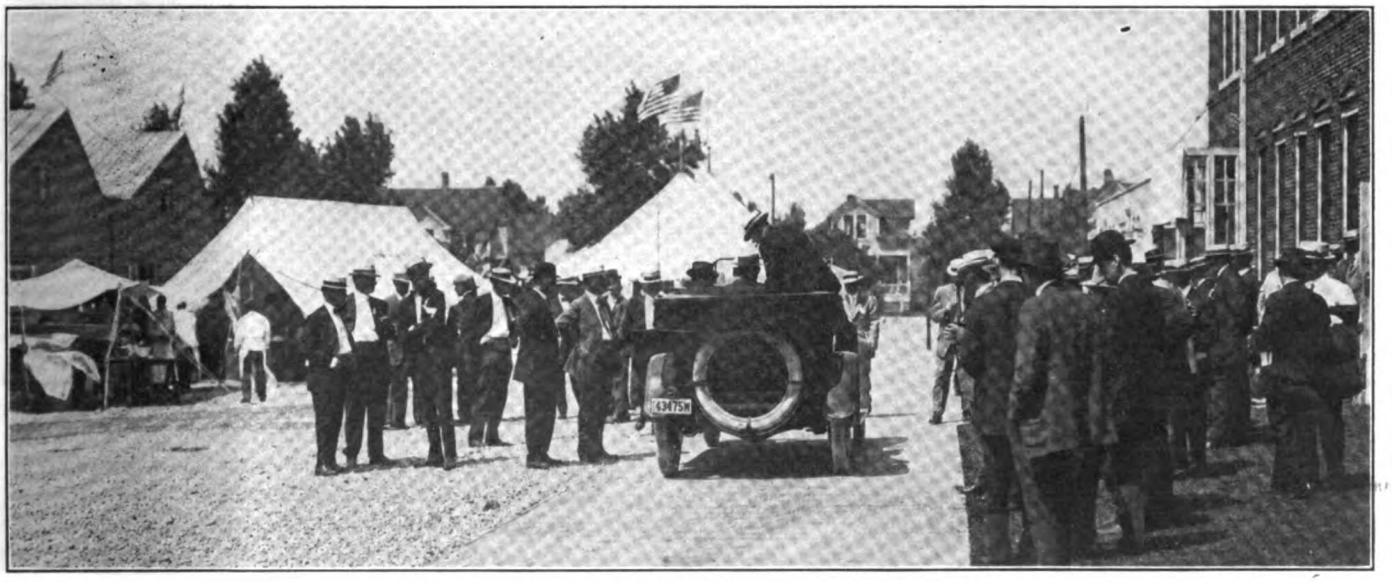
On Wednesday, commercial car day, the session was opened by a talk by Assistant Sales Manager Hill, who spoke of the merits of the Jeffery quad, and brought in also the Chesterfield six and the four-cylinder car. He spoke to the dealers—as they like to be spoken to—as if they were members of the firm. Walter Wardrup gave a talk on the coming of the commercial car era and gave examples of efficiency in service due to the adoption of commercial vehicles. He complimented the concern on the performance of the Jeffery quad and stated the ability of the truck is probably unparalleled. Following Mr. Wardrup came a heart-to-heart talk from Thos. M. Kearney, general attorney for the Jeffery company. Mr. Kearney spoke of his close association with Mr. Thos. B. Jeffery and said, "I don't believe he ever told a falsehood or induced anyone else to tell one."

O. A. Eskey, who drove a Jeffery quad through the government test, held some months ago in Texas, reviewed the incidents connected with the test. After relating all the stunts the truck was required to perform, he finished with the statement that the government officials volunteered the query, "Can it talk." Lunch was served, and in the afternoon the three engineers responsible for the Jeffery quad then took the stand and Martin Winner told of some of the mechanical features of the quad. The dealers then asked the engineers all sorts of questions concerning the vehicle.

Edward Lydon, a representative of the Bijur Motor Lighting Co., Hoboken, N. J., whose system is in use on the Chesterfield six, then explained the operation of the system and answered all questions relating to cranking and lighting which the dealers wished to know.

The complete list of those present follows:

H. B. Leary, Jr., Washington, D. C.; G. N. Bliss, factory; F. H. Glenn, factory; C. G. Anderson, factory; A. E. Creeger, factory; H. C. Hart, factory; B. F. Spencer, factory; John A. Rose, factory; C. B. Peck, factory; C. S. Culp, factory; L. C. Clayton, Albany, Ga.; C. R. Gleaton, Albany, Ga.; C. C. Kirby, Jacksonville, Fla.; H. B. Thrasher, St. Augustine, Fla.; Chas. Sibley, Antioch, Ill.; Fred Hawkins, Antioch, Ill.; W. A. Egerman, Aurora, Ill.; Mr. Whipple, Aurora, Ill.; Herman Bockelman, Beecher, Ill.; J. A. Hedrick, Bloomington, Ill.; Mr. Herring, Bushnell, Ill.; Mr. Herring, Bushnell, Ill.; A. M. Robbins, Chicago, Ill.; T. R. Burke, Chicago, Ill.; C. C. Slayton, Chicago, Ill.; G. B. Owens, Chicago, Ill.; E. J. Ward, Chicago, Ill.; W. J. Kuechler, Chicago, Ill.; E. E. Brugh, Chicago, Ill.; H. A. Arnold, Colfax, Ill.; F. M. Tenney, Decatur, Ill.; R. M. Tenney, Decatur, Ill.; Geo. Richardson, Ellsworth, Ill.; J. E. Masterson, Fairbury, Ill.; Earl Grimm, Fairview, Ill.; Geo. A. DeLong, Foosland, Ill.; Mr. DeLong, Foosland, Ill.; Elmer Veitmeier, Forreston, Ill.; W.



A FEW OF THE 300 DEALERS WATCHING A DEMONSTRATION OF THE CHESTERFIELD SIX; COMMISARY TENTS APPEAR IN THE BACKGROUND

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H. Callender, Galesburg, Ill.; Paul D. Herrin, Herrin, Ill.; Dr. O. W. Curry, Herrin, Ill.; A. J. Gurney, Joliet, Ill.; Geo. Eib, Joliet, Ill.; F. A. Babel, Kankakee, Ill.; Jonas Sawyer, Leland, Ill.; E. W. Beutke, Leonore, Ill.; L. E. Bird, Mechanicsburg, Ill.; W. D. Faires, Macomb, Ill.; Sam Shreffler, Manteno, Ill.; J. H. Patterson, Marengo, Ill.; R. E. Gray, Minonk, Ill.; H. B. Russ, Peoria, Ill.; A. H. Bane, Pontiac, Ill.; W. W. Robertson, Prentice, Ill.; A. E. Anderson, Princeton, Ill.; Wm. Piper, Princeton, Ill.; Dexter Stocking, Rochelle, Ill.; Thad. M. Graves, Rochelle, Ill.; Elmer E. Holmes, Rochelle, Ill.; Jno S. Joslyn, Rockford, Ill.; G. P. Grey, Rockford, Ill.; G. T. Bradford, Rock Island, Ill.; H. C. Hucke, Rock Island, Ill.; C. E. Austin, Rockton, Ill.; W. W. Ingram, Rutland, Ill.; C. F. Graber, Rutland, Ill.; B. White, Saunemin, Ill.; Wm. McKenzie, Springfield, Ill.; M. S. Thackaberry, Sterling, Ill.; T. N. Childs, Sterling, Ill.; Geo. M. Loy, Streator, Ill.; J. W. Worrell, Streator, Ill.; G. F. Shumway, Taylorville, Ill.; Mr. Walters, Woodstock, Ill.; J. R. Purnell, Kansas City, Mo.; J. Whitworth, Woodstock, Ill.; Dr. A. J. Thomber, Burlington, Ia.; W. E. Haves, Burlington, Ia.; J. H. Fenton, Cedar Rapids, Ia.; Mr. Dittmar, Dubuque, Ia.; Mr. Hansen, Fort Dodge, Ia.; Mr. Tyler, Fort Dodge, Ia.; Mr. Schutte, Fredericksburg, Ia.; Iver Iverson, Jewell, Ia.; W. M. Dean, Lake View, Ia.; Dr. N. A. York, Lisbon, Ia.; A. M. York, Lisbon, Ia.; F. E. Wall, Mason City, Ia.; Mr. Nockels, Mason City, Ia.; Norlan Snow, Ottumwa, Ia.; Herbert Snow, Ottumwa, Ia.; Jack Fleming, Sioux City, Ia.; J. Newton Smith, Waterloo, Ia.; Frank L. Emery, What Cheer, Ia.; C. M. Baker, Gary, Ind.; M. B. Morgan, Lafayette, Ind.; W. J. Snoddy, Lafayette, Ind.; Dr. M. W. Yencer, Richmond, Ind.; F. S. Church, Port Huron, Mich.; Charlie Frazier, South Bend, Ind.; C. D. Mayhugh, Pittsburgh, Kan.; G. L. Hudkins, Salina, Kan.; Mrs. Lennie-Smith, Alexandria, La.; Mr. Lennie-Smith, Alexandria, La.; C. P. Rockwell, Boston, Mass.; C. A. Pollock, Coldwater, Mich.; L. G. Bishop, Edwardsville, Mich.; B. F. Kenyon, Grand Rapids, Mich.; Mr. Huebner, Saginaw, Mich.; C. F. Bower, Caledonia, Minn.; G. J. McMaster, Lanesboro, Minn.; P. J. Downes, Minneapolis, Minn.; P. J. Keating, Minneapolis, Minn.; Mr. Haggerty, Minneapolis, Minn.; R. Aylmer, Moorehead, Minn.; T. V. Murphy, St. Louis, Mo.; H. S. Albrecht, St. Louis, Mo.; E. A. Freund, St. Louis, Mo.; Martin Cook, Bound Brook, N. J.; W. S. Van Doren, Bound Brook, N. J.; J. A. Cramer, Buffalo, N. Y.; Geo. F. Cramer, Buffalo, N. Y.; L. A. Cevasco, Norwich, N. Y.; Chas. Schiear, Cincinnati, O.; John R. McLaughlin, Columbus, O.; Thos. L. Jones, Blairsville, Pa.; J. S. Hurley, Philadelphia, Pa.; L. G. Martin, Pittsburgh, Pa.; Chas. B. Martin, Pittsburgh, Pa.; W. N. Mussina, Williamsport, Pa.; J. W. Dingess, Huntington, W. Va.; Mr. Johnson, Carey, O.; Ed. Zwiebel, Burlington, Wis.; Geo. Zwiebel, Burlington, Wis.; F. A. Bigler, Chippewa Falls, Wis.; Mr. Marsh, Chippewa Falls, Wis.; O. S. Jacobson, Dane, Wis.; A. E. Austin, Madison, Wis.; Al. Reeke, Milwaukee, Wis.; N. E. Osmond, Milwaukee, Wis.; H. M. Vogel, Milwaukee, Wis.; W. G. Schultz, Milwaukee, Wis.; S. G. A. Jones, Wichita, Kan.; Chas. Burns, Galesburg, Ill.; Dr. Opland, Beresford, S. D.; E. F. Bullard, Fenton, Mich.; Arthur D. Helbing, Beaver Dam, Wis.; T. A. Winsloe, Wollaston Sta., Mass.; T. Wrayburn Keeton, Elmira, N. Y.; Percy W. Dawley, Ogdensburg, N. Y.; R. O. Schunk, Columbus, Wis.; J. Givin Chase, Des Moines, Ia.; R. R. Minton, factory; G. A. Maxwell, Denver, Colo.; Thomas M. Kearney, Racine, Wis.; Mr. Smith, San Antonio, Tex.; F. A. Winerich, San Antonio, Tex.; Geo. Ringler, Fort Worth, Tex.; Geo. Ettinger, Fort Worth, Tex.; C. M. Le Roux, Kansas City, Mo.; J. H. Shirer, Ridgeway, Mo.; A. H. Larson, Manhattan, Kan.; E. E. Feazell, Kansas City, Mo.; F. C. Drager; R. L. Newton, factory; Mr. Kekes, Indianapolis, Ind.; Mr. Peterson, Indianapolis, Ind.; J. E. Corby, factory; C. D. Wright, Detroit, Mich.; C. A. Williams, Chicago, Ill.; F. E. Wright, LaCrosse, Wis.; Van Nelson, Waupaca, Wis.; T. B. Roach, Watertown, Wis.; Everett Keel, Monroe, Wis.; E. C. Spindler, Manitowoc, Wis.; Thos. F. Fay, St. Louis, Mo.; A. C. Fuge, West Bend, Wis.; R. M. Bigler, Chippewa Falls, Wis.; G. G. Quimby, Menominee, Mich.; Prince Wells, Louisville, Ky.; L. W. Kirk, Chebanse, Ill.; Wm. H. Mohr, Milwaukee, Wis.; J. P. Meehan, Milwaukee, Wis.; D. J. Kinney, Grand Rapids, Mich.; D. W. Ballentine, Bloomington, Wis.; A. H. Patch, Bloomington, Wis.; Mr. Reif, Toledo, O.; Geo. E. Wert, Toledo, O.; John Koons, Wausau, Wis.; Capt. Q. L. Slocumb, St. Louis, Mo.; Walter Wardrop, Chicago, Ill.; Mr. Warden, Geneva, O.; James Henderson, Youngstown, O.; Thos. H. Chambers, Youngstown, O.; S. P. Mango, Niles, O.; T. Oscar Evans, Akron, O.; C. E. Molesworth, Uhlrichsville, O.; Geo. Monnot, Canton, O.; J. H. Greenwald, Cleveland, O.; Mr. Meyers, Franklin, Pa.; J. L. Frick, Jamestown, N. Y.; G. T. Fox, Fort Wayne, Ind.; Mr. Jamison, Washington C. H., O.; Mr. Madden, Columbus, O.; Mr. Hudson, Memphis, Mo.; Mr. Fravel, Memphis, Mo.; Fred Raymond, Sycamore, Ill.; W. A. Kraak, Sheboygan, Wis.; Mr. Kilgour, Toronto, Ont.; Mr. Kennedy, Toronto, Ont.; Mr. Conrad, Omaha, Neb.; Mr. Mackey, Omaha, Neb.; Mr. Fulton, Omaha, Neb.; Mr. Peterson, Omaha, Neb.; Mr. Baer, Omaha, Neb.; Mr. McVicker, Omaha, Neb.; Mr. Heaston, Holmesville, Neb.; F. H. Beebe, Beebeetown, Ia.; C. R. Rumsey, Red Oak, Ia.; C. E. Anderson, Oakland, Neb.; J. L. Galbreth, Superior, Neb.; Lars Gunderson, Minden, Neb.; Frank Riggs, Portland, Ore.; Mr. Abbot, New Orleans, La.; Mr. Scripps, Des Moines, Ia.; L. M. Yoder, Belleville, Pa.; W. J. Adams, Hanover, Pa.; Harvey Butzer, Lancaster, Pa.; A. J. Schnell, Scranton, Pa.; John Butzer, Ephrata, Pa.; H. H. Cornell, Newtown, Pa.; H. Searles, Belvidere, N. J.; F. E. Brown, Oxford, Pa.; H. P. Passmore, Oxford, Pa.; J. G. Harris, Wilkes-Barre, Pa.; E. A. Krans, Allentown, Pa.; Mr. Butler, Philadelphia, Pa.; Mr. Matteson, Philadelphia, Pa.; Mr. Newman, Cedar Rapids, Ia.; C. C. Bachman, Waterloo, N. Y.; Mr. Ohse, Brooklyn, N. Y.; Mr. McCutcheon, Brooklyn, N. Y.; L. E. Rood, factory salesman; M. T. Duvel, Rochester, N. Y.; H. W. McKalip, Wilkinsburg, Pa.; J. J. Smith, Milwaukee, Wis.; J. Duesler, Ridgeway, Wis.; R. Segelke, Platteville, Wis.; F. Groth, Platteville, Wis.; E. E. Fiedler, Mineral Point, Wis.; Mr. Wolfe, Tiffin, O.; E. F. Hamilton, Tiffin, Ia.; Mr. Carter, Des Moines, Ia.; M. E. Lebon, Boston, Mass.; Vernon Roe, Osage, Ia.; J. Titijen, Alta Vista, Ia.; C. Woodward, McIntire, Ia.; Mr. Chandler, Ogdensburg, N. Y.; B. E. Van Sweringen, Phoenix, Ariz.; H. W. Jeffery, factory; L. H. Bill, factory; E. S. Jordan, factory; H. C. Hill, factory; W. B. Riley, factory; J. L. Jamison, factory; O. G. Formhals, factory; E. G. Soward, factory; G. C. Morgan, factory; W. E. Roberts, factory; J. W. DeCou, factory; F. R. Luescher, Rochester, N. Y.

MONTHLY CAR INSPECTION BY EFFICIENCY BUREAU

The Board of Governors of the Automobile Club of America, New York city, believing that members desire to secure greater efficiency and economy in the operation of their cars, has decided to broaden the scope and activities of the Efficiency Bureau, and to place it under the direction of the Technical Committee, of which Prof. Hutton is chairman.

Beginning September 1, this bureau will provide frequent—probably weekly—inspection of all members' cars registered in the bureau, and will report systematically upon their condition and the expense incident to their operation.

An engineer will be placed in charge of the bureau. Under him will be one or more competent inspectors, whose duty it will be to examine the subscribers' cars, make note of their condition, and record such data as may seem desirable. The inspections will take place in the club's garage at a time agreed upon between the member and the bureau. The data collected will be kept on file at the office of the bureau, where it can be consulted by the owner of the car or by his chauffeur, if the member so directs.

A monthly report, together with such recommendations as may seem desirable, will be sent to each subscriber to the service. This report will contain the following in addition to other useful information:

The number of miles the car has traveled during the preceding month.

The number of gallons of fuel the car has consumed during the month.

The number of miles per gallon traveled, and whether such rate is above or below the normal for that type and make of car.

The quantity of lubricant used.

The condition of each of the tires, the total miles each has traveled, and the number of miles which still remain before they equal their "guaranteed" life.

The general condition of the mechanical and electrical equipment and whether they are receiving proper care and lubrication.

The itemized total cost of fuel, lubricants, tires, repairs, etc., and the cost of operating the car per mile traveled.

The bureau will either write or telephone to the member concerning such repairs as may require immediate attention.

Doehler Gets Out New Bulletin.

"Die Castings in White Metal," a bulletin just issued by the Doehler Die Casting Co., Brooklyn, N. Y., describes and illustrates interesting die-cast work, explains the possibilities of the die-casting process and the economies of using die castings and enumerates the facilities of the Doehler company for prompt service.

With Dealer, Not Manufacturer.

From the report of the last meeting of the Motor Truck Club the inference might have been drawn that J. W. Perry is connected with the Lippart-Stewart Motor Car Co., Buffalo, N. Y. He is not connected with this company, but is manager of the Lippart-Stewart Motor Sales Co., New York city, the parent company's agent.

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Electric Association Boosting Tours

New York Body Maps Out Seven Trips for Electrics.

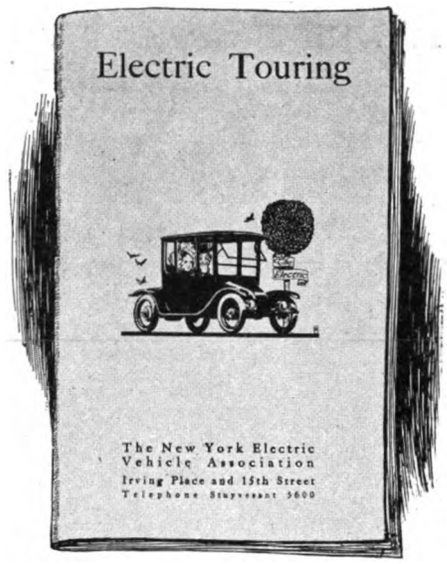
Electric touring. There is wizardry in the words. The suggestion conveys an impression of smooth gliding over shady country roads. And that this smooth gliding over country roads slowly but surely is increasing in popularity is amply attested by the numerous and completely successful, comparatively long-distance runs that have been made by the owners of electric vehicles.

On May 25, a Bailey electric for the first time in the history of electric vehicles made the run between New York and Boston inside of 24 hours; the distance was 247 miles and the average speed 22.8 miles an hour. Later, on June 12, R. L. Heberling, of the Philadelphia Storage Battery Co., and J. D. Maxwell, Jr., of the Detroit Electric Car Co., made the run from Philadelphia to Washington and back, completing the 167 miles at an average of 19 miles an hour. Still later, 54 owners of electrics participated in an electric sociability run in Washington which was an unqualified success.

All of which goes to show the possibilities of this class of vehicle for touring work of the kind. The car will do the work; the only requisite is a little missionary work on the part of dealers, central station men—and, above all, on the part of the motor car dealers' associations.

In this respect the New York Electric Vehicle Association has set an excellent example to its brother associations in the way in which this missionary work can best be carried on. The association has just completed and is distributing to every one of its members a small paper-covered book which may be carried in the pocket and in which there are mapped out seven tours for electric vehicle owners.

In working out its booklet, the New York Electric Vehicle Association went about it in a systematic and workmanship-like manner. In the first place, it reproduced from the Automobile Blue Book the official road directions. These it incorporated in its booklet, together with a clearly-marked map which shows the exact locations of charging stations, both those where the vehicle might be left over night and those where only a "boost" can be obtained.

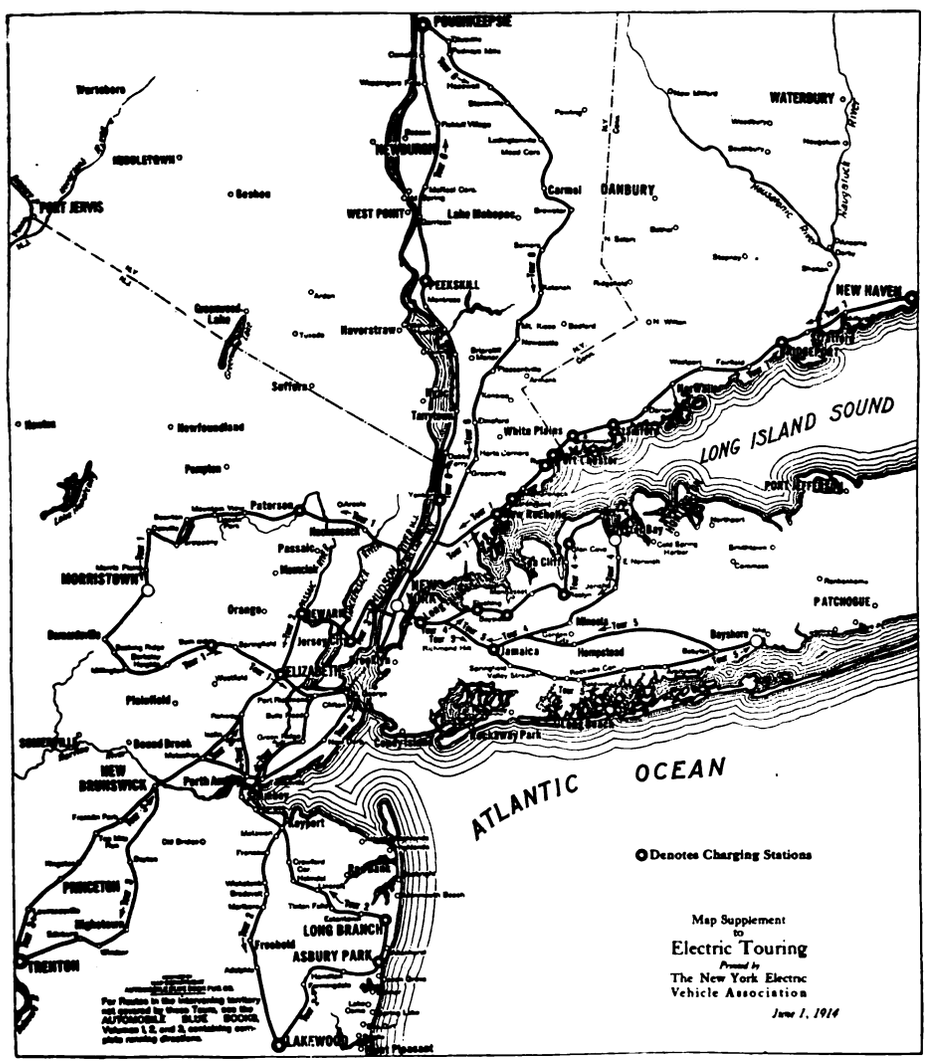


THE BOOK IS DISTINCTIVE AND ATTRACTIVE IN DESIGN

Take one of the tours for instance: New York City to Lakewood, N. J., and return. The total distance is 136 miles, and scattered along the route there are no less than six charging stations. From New York the route leads over the Weehawken ferry to Newark, a distance of 10 miles, where the first charging station is located. Further along a charging station is located at Elizabeth, N. J., which is 16 miles from New York. The next charging station is at Lakewood, and as the distance is only 65 miles there could be no possibility of the car running out of "juice" on the run.

This is but one of the tours; the other six are approximately the same length, and along the roads of all of them there are frequent charging stations. All of this is made plain by the map which accompanies the book and which is reproduced herewith.

The book itself is an inexpensive proposition, and inasmuch as probably nine-tenths of the matter it contains was obtained from the Automobile Blue Book Publishing Co., the work of compiling it and placing it in the proper shape for the users of electrics was not difficult. Here is a good work that should be taken up and carried on by motor car dealers' associations in a great number of American cities and there would seem no good reason why it cannot be done.



ALL 7 TOURS RADIATE FROM NEW YORK CITY, THE ASSOCIATION'S FIELD

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Holds Picnic Every Year for His Owners and Owns Town for Day

Dietz, of Small Ohio Town, Works Out Novel Plan—Costs Him But $40 or $50.

The small-town dealer very often finds it difficult to devise means of boosting sales, and some of the dealers in the lesser localities of the country believe the small town or village is not suitable for any extensive merchandising effort.

But C. A .Dietz, who handles the Maxwell in Pioneer, O., has found the small town ideal for a stunt he has worked out; it is a Maxwell picnic, and he holds it every year. It could not be carried out so well in a big city, but it works ideally in the small town.

Pioneer has but 660 people and there are but 25,000 in the whole county; the town is 50 miles west of Toledo on the end of a trolley line, and when Dietz gets his picnic under way he practically owns the town. The picnic is an event and leads to many sales. It is a big getter of good-will.

The affair is generally staged in the spring; as a starter Dietz plasters the town and countryside with posters and distributes handbills, inviting the people to come in. Every Maxwell owner in the county—and everyone else, for that matter—is invited. As they arrive in town Dietz distributes ribbon badges and labels everybody "Maxwell Boosters."

Another original move is his sign work. On every business place in town he posts signs. The ice cream parlor has a sign reading:

MAXWELL ICE CREAM.

The barber has a similar sign, which says:

MAXWELL SHAVES.

The hardwareman has a sign which says:

MAXWELL PLOWS FOR SALE.

Even the banker gets into the spirit of the day with a sign:

MAXWELL MONEY ON DEPOSIT.

And everybody else in town has a sign which labels his goods "Maxwell." "I treat them all alike," says Dietz, "and I can get a bigger crowd than a Fourth



C. A. DIETZ

of July celebration. The farmers talk about it for the balance of the year."

Dietz advertises that he will have used cars for sale on the day of the picnic, and he provides salesmen to sell—without expense to the owner—any used car. This service is gratuitious and makes friends—also sales. Many prospects are secured by this method.

Of course, there is the ubiquitous brass band. No festive occasion would be complete without one. But it gets a motor car outing free from Dietz and so the services of the members cost him nothing. In fact, the musicians are Maxwell boosters—and play Maxwell music.

In the evening there is a dance, with Maxwell waltzes, Maxwell tangoes and a Maxwell good time. A prize is offered for the best decorated car which comes to the picnic, and there are slow races and other similar events to entertain the visitors.

Because Dietz holds the outing in town and gives all the business places an opportunity to gather extra trade, the project is well taken by the townspeople and they all fall in with the idea. Dietz is present everywhere with his glad hand.

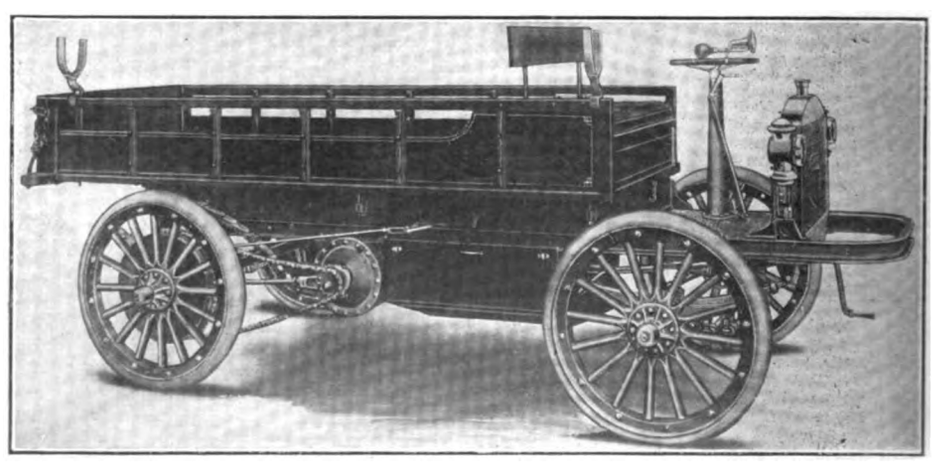
Inconsistent as it may seem, the cost of the whole business is, he says, only $40 or $50.

Koehler Truck Retains Main Features

Price Remains $750—Has New Radiator and Transmission Improvements Stub Type Gears.

No radical changes have been found necessary in bringing the Koehler 1,600-pound truck, manufactured by the H. J. Koehler S. G. Co., 1709 Broadway, New York, up to the standard required for the season of 1915. In fact, few changes of any kind have been made. The price remains unchanged, being $750 for the machine with flare-board open express body suitable for general work. Any type of body may be mounted, the cost of course depending on the construction.

The Koehler truck is a light machine, propelled by a horizontal motor with two opposed cylinders having a bore of 5¼ and a stroke of 4 inches, giving an S. A. E. rating of 22 horsepower. The motor is carried near the center of the chassis and drives, through a short shaft, to a special planetary gearset enclosed in a steel housing extending across the car under the frame and carrying in its heads



KOEHLER 2,000-POUND TRUCK EQUIPPED WITH EXPRESS BODY

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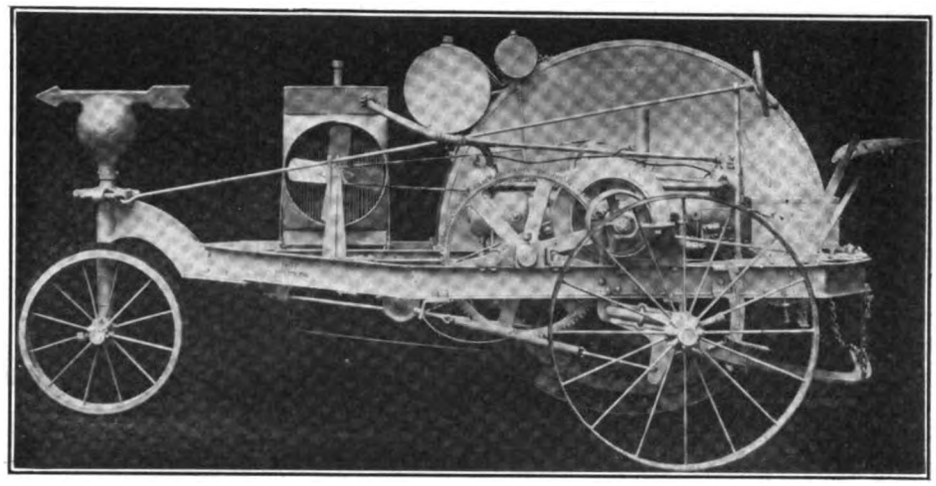
the bearings for the shafts on which are mounted the sprockets through which power is transmitted to the side chains which drive the rear wheels.

Though the gearset is enclosed it is readily accessible through a large opening and, if necessary, may be removed bodily in a few minutes by taking off one of the heads of the enclosing drum. The casing excludes dust and retains oil, the gears running at all times in a bath of oil. An improvement for 1915 consists in making the gear teeth of the stub type, adding to their strength, and in making the drum a one-piece cylinder with removable heads and hand-hole cover, instead of splitting it, as formerly.

A feature of the motor is the oiling system, which overcomes difficulties not infrequently encountered in motors of this type. A gear-driven oil pump in the bottom of the crankcase pumps oil through vertical pipes having their discharge openings directed at the connecting rods. The rods are formed with upward troughs into which the oil falls and whence it passes, through oil holes, to the crankpins and piston pins; the overflow is more than ample for the lubrication of the cylinder walls. Ignition is by high-tension magneto.

The cooling system has been improved by the substitution of a cellular radiator for the former tubular type, and the increase in the capacity of the cooling system as a whole. The radiator takes the place of the dashboard and there is perfectly free circulation of air through it; no fan is required.

The wheels are of large diameter—36 inches in front and 48 inches in the rear—and both are fitted with 2-inch solid rubber tires. The wheelbase is 86 inches and the tread 58 inches. The carrying capacity is 1,600 pounds. The gasolene tank, holding 16 gallons, is under the driver's seat. The frame, of channel steel, is carried around in front, forming a bumper.



THE BULL TRACTOR IS 12 FEET LONG, 6½ FEET WIDE AND 5 FEET 4 INCHES HIGH—THE ARROW IN FRONT AIDS IN GUIDING THE MACHINE

Bull Tractor, $335, Draws Two Plows

Three Wheels—Weighs 2,000 Pounds—50 Per Cent. Faster Than Horses.

Designed to replace horses in doing the work on a farm of small or moderate size, the Bull tractor, manufactured by the Bull Tractor Co., 27th street and University avenue, S. E., Minneapolis, Minn., has been brought to an unusual degree of simplicity and lightness, and the price has been set at $335. The tractor will pull two 14-inch stubble plows 50 per cent faster than horses and the motor will deliver 12 horsepower at the pulley for stationary work.

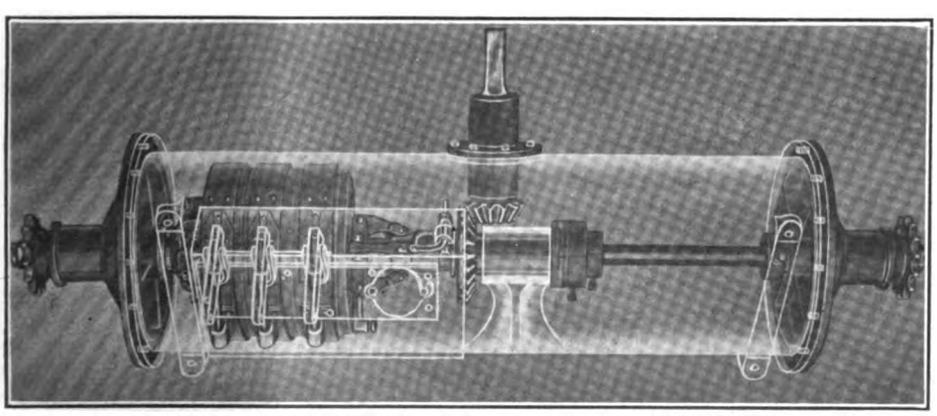
Three wheels are used, as the accompanying illustration shows, one, the bull wheel, from which the machine takes its name, being 5 feet in diameter with 12-inch face and taking the drive as well as carrying most of the weight. The front wheel tracks with the bull wheel and is used for steering, while the third wheel, opposite the bull wheel, is mounted on an axle that can be adjusted to keep the whole machine level and compensate for depth of furrow, for tilt on side hills and so on.

The motor has two horizontal opposed cylinders 4¾ x 6½ and is of substantial construction, having a 2¼-inch crankshaft; lubrication is by splash. The normal speed is from 750 to 800 r. p m. The outer end of the shaft carries a 10-inch pulley with 6½-inch face for a belt for driving stationary machinery.

Drive to the bull wheel from the motor is very direct, as there is no need for a differential and no change-speed gears are used. There are but 5 gears, and as one of these is the reverse gear, drive is ordinarily through only four. A pinion on the crankshaft drives to a large gear on a cross-shaft, which, in turn, carries a pinion meshing with a very large internal gear bolted to the inside of the bull wheel. The internal gear is made in four sections, so that in the event of a breakage but one section would have to be replaced.

The bull wheel casing is of sheet steel and affords protection to the driver. A sheet steel casing also covers the engine, protecting it from dust and dirt and stopping flying oil.

In plowing, the steering is not done by the operator, except when cutting the first furrow and when making turns. When the second furrow is started the steering wheel runs in the first, and so guides the machine in a parallel line and relieves the driver of a good deal of strain. The wheel is 28 inches in diameter and of the same steel construction as the other wheels of the tractor. The leveling wheel, opposite the bull wheel, is 40 inches in diameter with 4-inch face and runs on the stubble or unplowed ground.



DISTINCTIVE CYLINDRICAL CASE OF KOEHLER GEARSET

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Dealer's Legal Status

Accidents Which Occur While Car Is Being Demonstrated Are a Liability Upon the Dealer—Teaching to Drive Is Often Inadvisable.

By Geo. F. Kaiser

The problem of demonstrations is one of the most vexing and perplexing problems which confront the motor car dealer. Not only as a general thing is it customary at the present time to demonstrate a car to the prospective purchaser, but a great many dealers are willing to go even further and agree to teach the owner and the members of the family how to run the car.

It would seem in a case like this that a dealer takes a great burden upon his shoulders, when we remember that responsibility for accidents during demonstrations and while he is giving driving lessons is his.

Of late there have been numerous cases in the courts wherein it has been decided that when a dealer is demonstrating a car, or teaching a person under contract to buy a car how to run the same, he is responsible for any accidents which occur. In some of these cases the law seems to have been stretched a point in order to hold the dealer liable, as for illustration in cases where the owner himself is driving the car at the time of the accident.

Got $5,000 From the Dealer.

In an Oregon case of this kind a person, while walking along a street, was run down and hurt by a motor car in charge of a dealer's salesman. The car was being driven, however, by the man who had contracted to buy it. The salesman had just finished giving the demonstration and was acting as an instructor. The injured person recovered a verdict of $2,750 against the buyer and $5,250 against the dealer. The court, however, refused to accept this verdict, instructing the jury that it could not split up the damages that way and hold one party liable for one-third of the damages and the other party for two-thirds of the damages, whereupon the jury retired again and returned and gave a verdict against the dealer for the entire amount.

The latter felt that this was a little bit unjust and appealed to a higher court, but without success, for it was held that as it was understood that the buyer was to be taught to run the car, and the person in charge of it, though not actually operating it at the time of the accident, was one of the dealer's salesmen, the dealer was responsible and the verdict of the jury against him for $8,000 was right and proper. Holmboe vs. Morgan, 138 Pacific (Oregon) 1084.

Agreement to Teach to Drive.

Then, too, there is a chance of the person whom the dealer puts in charge of the car causing injury to the prospective buyer, or his guests, through negligence. In this event the dealer is also responsible.

In the case of Buick Automobile Co. against Weaver, 103 S. W. (Texas) 594, it was held that when a seller of a car agrees to furnish a competent man to instruct the buyer, the instruction is presumed to extend over a reasonable time.

Here, the buyer of the car was injured through the negligence of the dealer's employe and recovered $5,000 damages for his injuries from the dealer. The car turned a somersault while rounding a curve and threw its occupants into a ditch. The court said that the dealer's agent was negligent in taking a curve at the rate of 30 or 40 miles an hour, and as it was the dealer's duty to furnish a careful driver, the $5,000 judgment was proper and should stand.

Danger in Loaning a Chauffeur.

A dealer is apt to succeed in giving a person to whom he is selling a car a satisfactory demonstration and in teaching him how to run the car without subjecting himself to a law suit, only to be asked by the buyer to send someone to take the car through the crowded part of the city because of the buyer's inexperience in driving.

In a case of this kind, decided a short time ago, the dealer did send a chauffeur to take the car to the purchaser's home and on the way an accident occurred. The injured party, of course, sued the dealer and the court held that the chauffeur was sent as part of the dealer's general business and in furtherance of the same and for that reason during the trip he was the dealer's servant. The dealer was accordingly held liable for the injuries notwithstanding the fact that on the way several times the chauffeur had stopped at various supply stores in order that the purchaser might buy certain accessories. (Dalrimple vs. Covey Motor Car Co., 135 Pacific.)

Avoid Too Much Demonstration.

When the above decisions have been carefully read over it will be agreed that whenever possible it is well to avoid too much demonstration and only when absolutely necessary should a dealer agree to instruct the buyer how to run the car.

There are enough legal liabilities placed upon motor car dealers without those illustrated above and, after a prospective purchaser has had his car delivered to him, when the wise dealer is requested as a favor to drive the car home for the purchaser, or have a chauffeur to do so, he will find that there is no one around just at that moment who is able to drive.

Milwaukee to Have Stock Contest.

Milwaukee, which, as everyone knows, is in Wisconsin, is to have a stock car economy contest. The Wisconsin State Automobile Association stands sponsor for the event, which it is proposed to hold on Thursday, Friday and Saturday, September 3, 4 and 5, over a route approximately 475 miles in length.

The contest is proposed as a revival of the annual contest for the Milwaukee Sentinel $1,000 trophy, which was hung up in 1910 but which has not been contested for since 1913 because of inability to obtain a sanction for a stock car event.

The first day's route is from Milwaukee to Green Bay via Algoma, Wis.; the second, from Green Bay to Madison through the Fox River valley, and the final day from Madison to Milwaukee by way of Janesville, Beloit, Kenosha and Racine.

Only stock cars, equipped per catalog, will be eligible to enter, and contesting cars will be graded according to price, number of cylinders, weight, including occupants; piston displacement, etc. There will be technical examinations before and after the run and penalties will be inflicted for broken or inoperative parts. M. C. Moore in a Mitchell is pathfinding the tour.

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The Week's Incorporations

Los Angeles, Cal.—The Over-All Roller-Bearing Co.; capital $500,000. Corporators—T. W. Starr and others.

Portsmouth, O.—Motor Fuel & Lubricating Co.; capital $5,000; to deal in motor cars, accessories and supplies.

San Diego, Cal.—Owl Taxicab Co.; capital $50,000. Corporators—Herbert C. Guild, Horton L. Titus and E. L. Davin.

Louisville, Ky.—Peerless Tire & Rubber Co.; capital $10,000. Corporators—A. F. Wolke, C. H. Wolke and Keith L. Bullitt.

Kansas City, Mo.—Auto Jack & Storage Co.; capital $25,000. Corporators—Robert Parker, L. H. Parish and R. E. Stucker.

Buffalo, N. Y.—Meinhard Auto Service-Specialties-Sundries Supply Co. Corporators—C. J. Staples, C. H. and T. P. Meinhard, all of Buffalo.

Eddyville, N. Y.—Sanders Wilson Barnaby Co., capital $25,000; to deal in motor cars, etc. Corporators—K. T. Barnaby, Newark, N. J., and others.

Yonkers, N. Y.—Foster Motor Sales Co.; capital $3,000. Corporators—George B. Foster, Mary E. Foster and J. Bertram Foster, all of 84 Ludlow street.

Boston, Mass.—Mohawk Motor Car Co.; capital $40,000; to deal in motor cars. Corporators—C. E. Bosworth, Whitman; H. E. Fullam, Lynn, and others.

Chicago, Ill.—Lincoln Motor League; capital $2,500; to manufacture, repair and deal in motor cars. Corporators—A. H. Maurer, C. E. Hall and W. A. McGivern.

Milwaukee, Wis.—Regal Motor Co.; capital $5,000; to deal in motor cars and accessories. Corporators—D. Wittenberg, H. E. Legg and N. M. Wittenberg.

New York, N. Y.—S. S. Garage Co.; capital $5,000; to operate a garage. Corporators—C. F. Evans, H. S. Stowell and J. F. Staiber, all of 153 West 54th street.

Richmond, Va.—Overland Motor Co.; capital $5,000 to $20,000; to deal in motor cars. Corporators—D. P. Browder, O. C. Granger and others, all of Richmond.

Ft. Wayne, Ind.—Ft. Wayne Overland Auto Co.; capital $5,000; to deal in motor cars. Corporators—James S. Walsh, Thomas F. Gaskins and George H. Zehender.

Cleveland, O.—Fenfar Co.; capital $10,000; motor car parts. Corporators—E. W. Farr, C. W. Fenner, F. J. Breeler, Otto Gutemann, W. E. Ward and C. A. Ehert.

New York, N. Y.—Whitefield Motor Car Co.; capital $175,000. Corporators—M. J. O'Brien, Jr., 2 Rector street; A. J. Corey and D. Dilworth, all of New York City.

Wilmington, Del.—Pittsburgh Motor Car Co.; capital $100,000; to manufacture motor cars and all kinds of motors. Corporators—J. M. Frere, H. J. Davis and G. Shearer.

Esopus, N. Y.—Kronenberg's & 7th Street Garage; capital $1,000. Corporators—Harris Weinstein, 92 Christie street, New York; Bertha Kronenberg and Bertha Kronenberg, both of 113 East 77th street, New York.

Madison, Wis.—Star Tire & Rubber Co.; capital $5,000; to manufacture and deal in tires and rubber goods. Corporators—J. W. Mort, C. E. Mort and M. M. Mort.

Boston, Mass.—Chalmers Motor Co. of Massachusetts; capital $100,000; to deal in motor cars. Corporators—J. J. Murray, Boston; J. L. Hermanson, Brookline, and others.

Buffalo, N. Y.—W. & L. Mfg. Co.; capital $30,000; to repair motor cars. Corporators—H. Z. White, 183 West Tupper street; B. O. Lee and P. W. Lee, all of Buffalo.

Cleveland, O.—Windemere-Euclid Garage Co.; capital $10,000; to operate a garage. Corporators—Carl R. Baker, C. F. Taplin, Earl H. Wells, V. M. Harris and E. M. Golding.

Cleveland, O.—Simplex Distributing Co.; capital $10,000; to sell motor cars. Corporators—F. S. McGowan, E. A. Foote, A. R. Manning, Jr., S. Chestnutt and M. N. Job.

New York, N. Y.—Garrett Auto Service Co.; capital $10,000. Corporators—H. G. Commons, 210 West 78th street; R. D. Whiting and W. G. Stahlnecker, all of New York City.

Hempstead, N. Y.—Baker Rim & Auto Supply Co.; capital $5,000; to conduct a sales agency. Corporators—H. L. and G. H. Bankney and O. J. Ipsen, all of Garden City, and others.

New York, N. Y.—Canada Carbide Sales Co.; capital $10,000. Corporators—Henry J. Fuller, Dongan Hills, S. I.; Douglas W. Dunn, Orange, N. J.; Walter L. Bush, West Brighton, N. Y.

Saranac Lake, N. Y.—Shelley Tool Co.; capital $10,000; to deal in motor cars, motorcycles, machinery, etc. Corporators—Nathan M., John H. and Hattie B. Shelley, all of Saranac Lake.

Milwaukee, Wis.—The L-Arrow Auto Livery Co.; capital $10,000; to operate a taxicab and motor livery service. Corporators—Charles H. Ewe, William F. Albers and Charles W. Modersolm.

Flint, Mich.—Monroe Motor Co.; capital $250,000; to manufacture light cars. Corporators—R. F. Monroe, W. C. Durant, Arthur C. Bishop, R. T. Armstrong and Curtis R. Hathaway, of New York.

New York, N. Y.—Pickens Auto Cloth Co.; capital $1,000. Corporators—Sale A. Pickens, 117 East 17th street; James W. Pickens, 5 West 65th street; Benjamin Simon, 17 East 101st street.

Wilmington, Del.—Day Tire Protector Co.; capital $100,000; to manufacture motor car tires. Corporators—F. K. Hansell, Philadelphia, Pa.; G. H. B. Martin and E. T. Vennel, both of Camden, N. J.

Cleveland, O.—Hudson-Stuyvesant Motor Co.; capital $25,000; to manufacture motor cars and supplies. Corporators—F. E. Stuyvesant, Richard L. Kressen, B. J. Guthery, R. E. William and H. M. Kodet.

Utica, N. Y.—Utica Garage Co.; capital $1,500; to operate a garage. Corporators—Paul Bartmer, 25 Plant street; Park T. Higgs, 1052 Elm street; Benjamin H. Dwinnel, Osborne avenue, New Hartford, N. Y.

Brooklyn, N. Y.—Ellenbeck Tire & Supply Co.; capital $5,000; to manufacture ,deal in and repair tires, sundries, etc. Corporators—William Ellenbeck, Jr., 44 Hancock street; Elmer H. Wilkinson and Elmer Wilkenson, both of 161 Underhill avenue.

New York, N. Y.—Uneeda Tire Filler Co.; capital $100,000; to manufacture and deal in motor car accessories. Corporators—M. E. Rosenthal, New York; J. Golden, Brooklyn; T. Bligh, New York.

Wilmington, Del.—Mogul Starter Co.; capital $100,000; to manufacture and deal in starting devices for internal combustion engines., etc. Corporators—W. H. Harris, E. J. Enlers and J. F. Southard, all of Chicago, Ill.

Changes in Capitalization.

Cincinnati, O.—United States Motor Truck Co., from $25,000 to $300,000.

Chicago, Ill.—Chicago Gear Co., from $10,000 to $30,000.

St. Louis, Mo.—George C. Brinkman Motor Car Co., from $15,000 to $50,000.

Akron, O.—Marathon Tire & Rubber Co., from $100,000 to $500,000.

Columbus, O.—Twyman Motor Car Co., from $30,000 to $10,000.

Recent Losses By Fire.

Sudbury, Ont.—Proctors Garage & Auto Livery; eight cars and building destroyed; loss $10,000.

Sharon, Mass.—Frank A. Millard; garage destroyed; loss $15,000.

El Centro, Cal.—Alcorn Rubber Co.; damaged; loss $3,000.

Philadelphia, Pa.—Adams Express Co.'s garage; building and 200 motor trucks destroyed; loss not stated.

Brady, Tex.—Brady Automobile Co.; six cars and building destroyed; loss $22,000.

San Rafael, Cal.—Meager Garage; loss $8,000.

Milwaukee, Wis.—State Fair Park; majority of buildings and grandstand destroyed; loss not stated.

San Diego, Cal.—Davis-Leavitt Second-Hand Auto Garage; building partly destroyed; loss not stated.

Change of Corporate Title.

Cleveland, O.—Winton Motor Carriage Co. to Winton Motor Car Co.

Coming Events

*** Indicates sanction by A. A. A.**

Aug. 16, Le Mans, France—Automobile Club de la Sarthe's Coupe Internationale light car race, 1 liter, 400 maximum cylinder area and 350 to 500 kilos weight.

Aug. 17, Le Mans, France—Automobile Club de la Sarthe's Grand Prize de France for 4½-liter cars.

Aug. 21-22, Elgin, Ill.—Road races under the auspices of the Chicago Automobile Club.*

Aug. 23, Auvergne, France—Coupe de l'Auto Race.

Aug. 27, Brooklands Track, England—Annual Automobile Race.

Aug., Russia—Road race; Coupe de l'Empereur; 2,000 miles.

Sept. 2-7, Hartford, Conn.—Hartford Connecticut Fair Association's annual motor car show, in Exhibition Hall.

Sept. 6-7, Brescia, Italy—Automobile Club of Italy's 4½-liter Grand Prize.

Sept. 7, Providence, R. I.—Track Racemeet under the auspices of F. E. Perkins.

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Advanced Maintenance

REPAIRING THE DAMAGED FENDER

By George Fernwell

A detailed description of principles and methods of manipulation is here given to enable the novice to help himself to acquire the necessary skill.

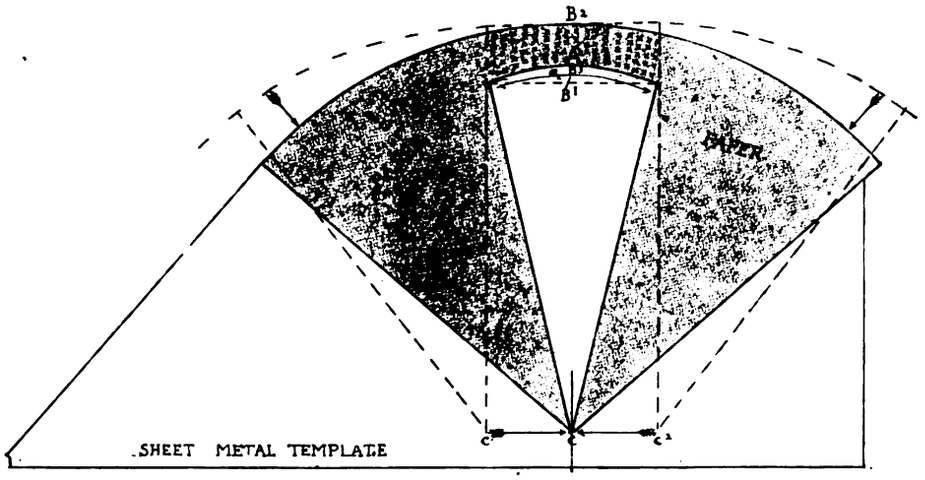


Fig. 3—To obtain an idea of the principle of contracting sheet metal cut a piece of paper to outline indicated by Fig. 2 and force it to coincide with outline indicated by Fig. 1. Note effect on inner edge and on surface of parallel section. It is too long to lay flat and humps up

Fig. 1 indicates the normal outline of a fender. The curved portion is a continuous curve with no change in radius or in the position of the center of radius.

Fig. 2 illustrates the possible contour of a fender which has been stretched at the portion of the rim marked (a). Of course it is very improbable that the distortion of the fender could be as regular and symmetrical as in Fig. 2, but it is assumed to be that way to facilitate explanation.

Referring to Fig. 2, the two segments of the curve which normally had a common center, as in Fig. 1, in Fig. 2 have their centers of generation at D 1 and D 2 widely separated. Obviously, in restoring the distorted fender to normal contour the straightened section of the rim a, Fig. 2, must be subjected to a graduated contracting process. The maximum amount of contraction in length must be caused at e-1 and the minimum at e-2.

With the contracting process correctly carried out the straightened section of the rim (a, Fig. 2) would be caused to reassume its proper form of a segment, as at a, Fig. 1. At the same time the separated centers, D 1 and D 2, would be brought together so as to coincide as at b, Fig. 1. To better insure a grasp of the conditions, lay out on a sheet of paper or metal the dotted outline in Fig. 3, which is an enlarged view of the stretched and unstretched portions of the curve in Fig. 2.

Cut the material out to the dotted line and apply it to the sheet metal template of the correct curve of the fender as in Fig. 1, preferably applying mucilage to the under side of the paper everywhere except at a, Fig. 3.

With the curved edges of the paper coinciding with those of the template, the points of the segments c-1, c-2, will be brought together at C. It can now be seen that while the outer edge b-2 or a, Fig. 3, will lie quite close to the template, the inner edge b-1 of a is very much too long to lie flat on the template and it can be noted that the excessive length causes the edge b-3 to rise to a sufficient height from the face of the template to cause the surface of a to assume a mound-like form, partly spherical and partly conical.

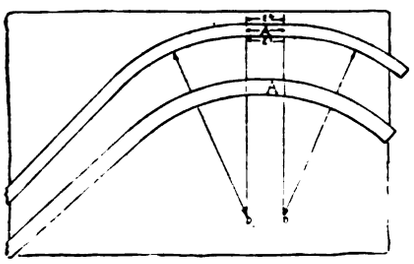


Fig. 1, lower — Fender which has been stretched. Fig. 2, upper—Normal fender showing proper contour

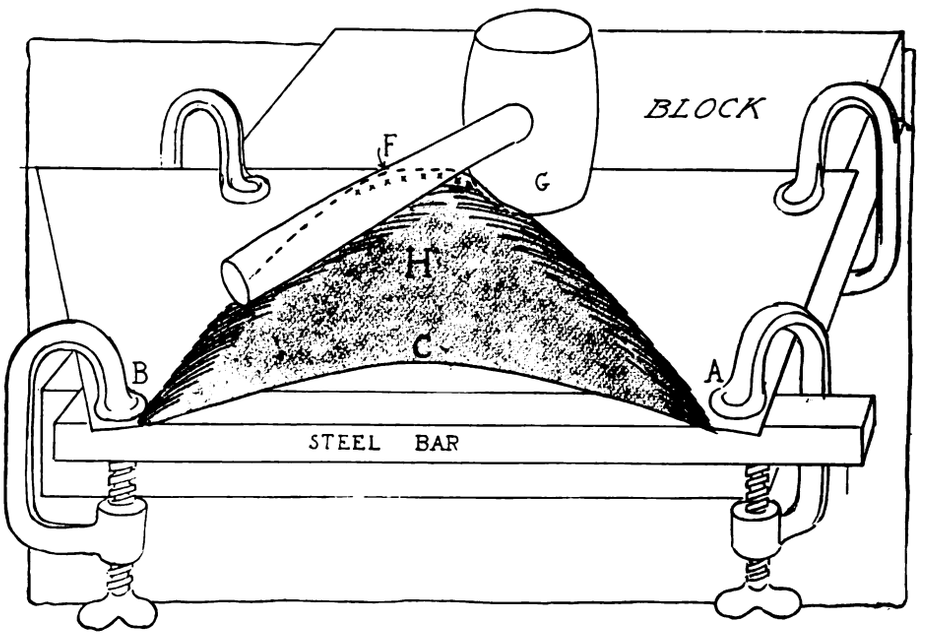


Fig. 4—In order to avoid destroying fenders by improperly operating on them it is wise to practice upon a piece of waste metal of the same thickness as the fender. This picture shows a home-made apparatus for obtaining the necessary proficiency

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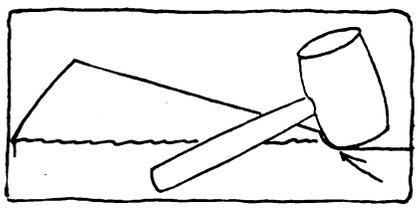


Fig. 5—Only the heel of the mallet should be used and every blow must be made to overlap the preceding one.

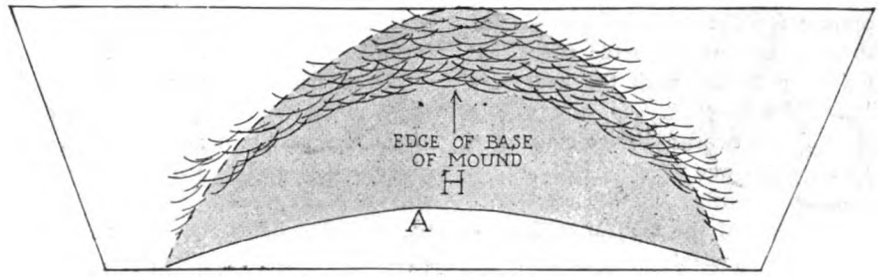


Fig. 6—This shows the half way stage in the process of contracting a piece of waste metal in preparation for the actual operation upon a fender. Each curve represents in exaggeration the imprint made by the heel of the mallet.

If it be thoroughly saturated with hot water so that the paper is reduced almost to a pulp the material at a may be treated in a somewhat similar manner to that in which a, of thin sheet steel, could be treated if made red hot. By rubbing the paper in long curving strokes, commencing at the edge b-2, using the finger or the rubber at the end of a lead pencil and gradually working away from the edge b-2 towards the edge b-3, as indicated by the curved rows, the mound-like shape of a will be gradually but only partially obliterated; that is, a will become more nearly flat.

Each rubbing stroke of the pencil must positively overlap the preceding one. The paper may not be expected to yield as readily to the treatment as heated metal would, but the described experiment will serve to illustrate the principle underlying the process of contracting sheet metal.

The novice wishing to insure a fair degree of success in performing an actual repair job as described in the last issue would do well now to perfect his grasp of the ideas involved by preliminary practice on at least one piece of waste sheet metal. Procure a piece of soft sheet steel approximately six or eight inches wide by about twenty inches long.

Clamp one corner to a steel bar as at a, Fig. 4. Clamp the corner B, Fig. 4, in such a position that the edge c of the sheet steel is raised from an inch to an inch and a half above the steel bar. Clamp the sheet steel at d and e to an iron face plate or other smooth iron surface, insuring that the sheet metal at f is in contact or nearly so with the face plate.

Next take a mallet with a smooth face and with the edges of the face not too sharp and commence to strike a regular series of blows with the mallet; G, Fig. 4, illustrates the first mallet blow of a series. It can be noted that the heel of the mallet, Fig. 5, has apparently buried itself in, but is actually concealed by the base of the sheet metal mound h at g.

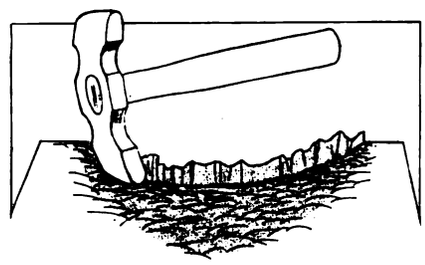


Fig. 7—Wrinkles which form near the raw edge of stock which is being contracted

The result of that particular blow and of all succeeding blows may be described as an indentation, produced by the mallet in the conical surface h, driving the metal down into contact with the surface plate, thus at each blow extending the flat surface of the sheet metal and diminishing the conical surface at the same time.

In Fig. 6 the same practice sheet of metal can be seen with the conical surface about half worked out or merged into flat surface. The numerous curved lines indicate the position and the overlapping of mallet blows, prior to the indicated stage of the work. Of course the heel of the wooden mallet would not leave sharply defined curves as are indicated. If the workman has proceeded to this stage successfully he need not hesitate further about attempting the repair job described in the last issue.

For his own information, however, he can proceed with the contracting process until his courses of mallet blows have as nearly as possible reached the edge a, Fig. 6, where he will find increasing difficulties the nearer he approaches the extreme edge owing to the edge a being in a raw condition; that is, a single thickness of metal not folded.

In some actual construction work in which this process of contraction is required, a practical method, where possible, is to cut the sheet metal so as to provide a margin or a selvage about an inch wide which would, at the completion of the contraction process, be trimmed off. Fig. 7 shows the almost unavoidable wrinkles produced at the extreme raw edge of the sheet metal. These can be worked out with still more skillful handling.

Fig. 8 shows the approximate appearance of cross-section of the conical surface h, Fig. 4, caused by successive overlapping courses of blows. In Fig. 8, however, such even and regular results as are indicated can be obtained only with machine-like precision of direction and aim of hammer or mallet blows, with perfectly regular overlapping of successive courses of blows. As unaccustomed hands cannot be trusted to use

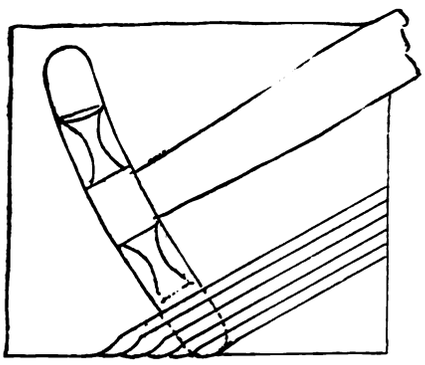


Fig. 8—Indicating the kind and direction of hammer blow which must be produced with the heel of the mallet

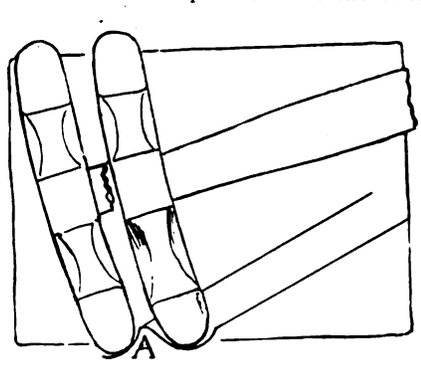


Fig. 9—Showing the effect left when the successive blows do not overlap — Note Ridge A

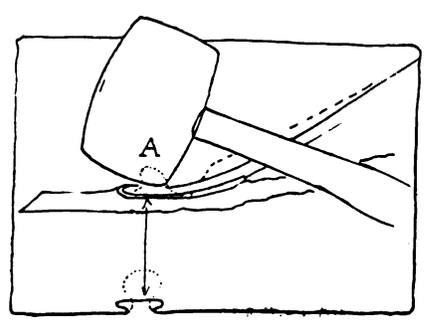


Fig. 10, upper—The ridge will be doubled down upon subsequent blows, leaving a formation like Fig. 11, lower

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a hammer for the described work, Fig. 8 can serve only to show the effect that should be produced with the heel of a mallet.

Fig. 9 shows two successive courses of blows in which one course of blows did not overlap the other. This view is also a cross-section of the conical surface of Fig. 6, and is possibly exaggerated.

Fig. 10 shows the probable effect of a subsequent blow, having as its object the removing of the ridge a, Fig. 9. As indicated in Fig. 10, the mallet or hammer blow directed at the ridge a would have the probable effect of creasing the metal into a fold so that when completely flattened there would be four separate walls or thicknesses of the sheet metal. Once the metal is so disposed as at Fig. 11 (see dotted line) it is practically impossible to prevent the folds being formed as at Fig. 11. (Full line.)

The particular process of manipulating sheet metal which has been the object of this discussion, if acquired, will prove immensely useful to the workman in innumerable instances of a wide range of repair and construction work connected with automobiles. Several instances will be discussed from time to time, and to avoid repetition the above instructions, examples and figures will in future be referred to.

The car repair which was assumed to be in hand required the fender to be repaired at its stretched rim, and the bent runningboard bracket and fender irons required straightening and readjusting.

(To be continued)

Questions Answered

There Are Many Radiator Patents.

Motor World:

Dear Sirs—I am a subscriber for Motor World and have read with interest your various articles on repairing radiators and gasolene tanks. As that is my line of business I would like to ask you if the radiators you describe in your articles are patented or if there are any patented radiators on the market at the present time.

Thanking you in advance for an early reply, I remain,

Very truly yours,
VICTOR U. HEATHER
Sheet Metal Works
9 Oakes Street, East, Grand Rapids, Mich.

Nearly every principal manufacturer of radiators has one or more patents on his type of radiator, covering some part or principle. Some of these cover machines for forming the parts.

The information given by Mr. Fernwell is, however, presented for the benefit of anyone who cares to use those methods of making repairs; there are no patents on the methods. Motor World will be only too glad to have you take advantage of anything you find in the Advanced Maintenance Department.

But if you contemplate manufacturing radiators in any considerable quantity you would do well to investigate the radiator patent situation thoroughly in order that your investment may not later be tied up by litigation, but if you are repairing only, patents probably will not concern you.—Ed.

Hudson 1915 Axle.

Editor Motor World:

Will you please tell me the exact type of rear axle used in the 1915 Hudson light six?

W. J. R., San Francisco, Cal.

The Hudson 1915 light six rear axle is of the full floating type.

High Prices of Para.

Editor Motor World:

Will you give me the highest market price for fine old up-river Para rubber for the last 10 years?

T. F. G., Jr., Louisville, Ky.

The highest New York prices for up-river Para rubber for the past 20 years are as follows:

1894	$ .73
1895	.81½
1896	.81
1897	.89
1898	1.06
1899	1.10
1900	1.11½
1901	.95
1902	.92
1903	1.13
1904	1.32
1905	1.35
1906	1.28
1907	1.24
1908	1.30
1909	2.15
1910	2.90
1911	1.67
1912	1.22
1913	1.10

Newtone Defends Dealer.

Editor Motor World:

To correct an erroneous impression given by an article in your issue of August 6th, where you referred to recent Lovell-McConnell litigation, with the implication that the Lovell-McConnell Co. had succeeded in winning a preliminary skirmish by making the Automobile Supply Mfg. Co. a defendant, we would advise you that the facts in this matter are just the other way about.

On July 6th the Lovell-McConnell Co. filed a suit against Julius Bindrim, and by the next day the Automobile Supply Mfg. Co. had placed the subpoena in the hands of their own patent counsel, who succeeded in obtaining a copy of the papers on July 9th. The Automobile Supply Mfg. Co. at once sought to intervene and defend this suit against its dealer; but the Lovell-McConnell Co. refused to consent to the request and the matter had to be argued in court, where the Lovell-McConnell Co.'s counsel again opposed it. Nevertheless, and in spite of the Lovell-McConnell Co.'s opposition, the Automobile Supply Mfg. Co. succeeded in obtaining from Judge Veeder an order permitting them to intervene and defend the suit.

As correctly set forth in a previous issue, the Hutchison patent in suit is for the "non-rigid elastic connection between driver (or cam) and the diaphragm." The Newtones and Newtone Superiors have a rigid non-elastic connection and of course are not infringements.

Automobile Supply Mfg. Co.

S. A. E. Council Meeting Aug. 24 and 25.

The next meeting of the Council of the Society of Automobile Engineers will be held at New York city headquarters, August 24 and 25, when it will be decided, among other things, whether the proposed European trip will be taken. The present disturbances among foreign powers has necessitated a policy of watchful waiting on the part of the S. A. E. The ballots on the voting of the proposed amendment to the constitution will be counted August 15.

Several division meetings also are in prospect, one of which will be the Electrical Vehicle Division. The Standards Exchange Division will meet to take up with engine guilders the matter of providing for standardization in bell housings for attaching gear boxes to unit power plants and housings for attaching gear boxes to rear axles.

Jeffery Names Two New Distributers.

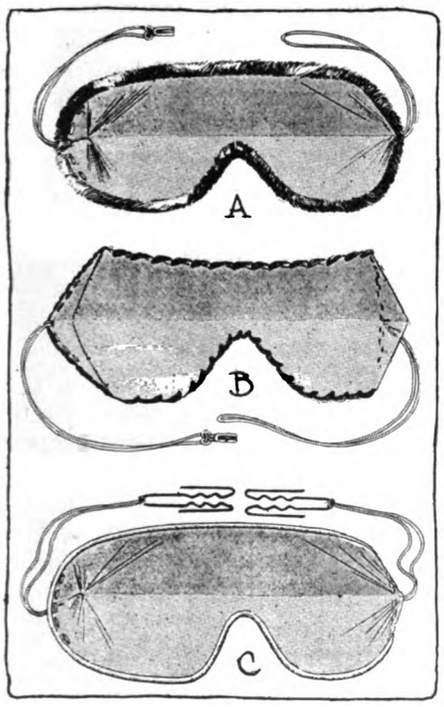
The Frank C. Riggs Co., Portland, Ore., has been made state distributer of Jeffery cars. McArthur Bros., Phoenix, have been made Arizona distributers.

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RECENT DEVELOPMENTS in ACCESSORIES

Flexible Dimmer Goggles.

A flexibie one-piece goggle, designed especially as protection against the blinding glare of headlights, is manufactured by the Dimmer Goggle Co., Whiting, Ind. The substance of which the goggle is made is pyralin, which is flexible, amply strong for the purpose and inexpensive. The lower part is of an amber color and the upper part dark green, the idea being that when the



THREE TYPES OF DIMMER GOGGLES

wearer sees a dazzling light approaching he tilts his head forward and looks through the upper part of the goggle.

Three types are made, as shown in the accompanying illustration; the first has silk bound edges, the second a rubber binding, while on the third the retaining band is fitted with a pair of devices that are the lineal descendants of hair pins and which can be inserted in the back of the hair. Obviously the third type is intended for the use of women.

Laminated Rubber Inner Tube.

An inner tube which is said to be proof against porosity and slow leakage because of its peculiar construction is manufactured by the Double Fabric Tire Co., Auburn, Ind. In the manufacture of this tube the manufacturers state that nothing is used but new Para rubber, the only ingredients added being the chemicals necessary for the curing of the rubber.

A number of separate plies of thin rubber are combined to form the walls of the tube, which are considerably thicker in the aggregate than the walls of tubes of ordinary construction. The laminations are alternately of red and gray rubber.

In addition to the laminated tube, which the makers style the double rubber tube, the company makes a gray tube which is of standard thickness and a red tube which is 25 per cent thicker than the standard. The same quality of rubber is used throughout the line. The price of the gray tube in 34 x 4 size is $4.90; of the red tube in the same size $5.65, and of the double rubber tube $6.45. The makers call attention to the fact that though the double rubber tube is 50 per cent thicker than the standard tube the price is but 30 per cent greater.

Spark Plug Pump and Regulator.

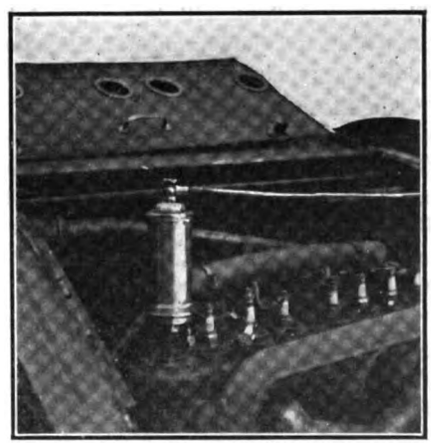
One of the most recent of the many spark plug air pumps offered for sale is a device manufactured by the Hill Pump Valve Co., Chicago, Ill. The Utility Automatic Tire Pump, as it is designated, is similar in a general way to other pumps of its class. It is particularly well made, however, being constructed entirely of brass and bronze.

The most unusual feature of the outfit is not the pump itself but a regulating device which is placed in the air line where the hose is coupled to the tire valve. The object of the regulator is to prevent over-inflation. A sleeve is turned to set the regulator for any desired pressure, and when that pressure is reached the air is permitted to escape without passing into the tire; and in escaping it makes a whistling noise which calls attention to the fact that the tire is inflated. The complete outfit includes the pump, 12 feet of hose, valve connector, and the regulator which is called the Pneu-meter.

Haynes Has Novel Glare Eliminator.

The dazzling headlight problem has been solved by the Haynes Automobile Co., Kokomo, Ind., in a simple way which does not involve the use of auxiliary apparatus or extra moving parts. The upper parts of the headlight bulbs are frosted while the lower parts are left clear, the result being that the upward rays are diffused, softened and robbed of their blinding effect, while the light which passes through the clear glass of the under side of the bulb is projected straight ahead upon the road with full radiance.

This arrangement is quite satisfactory for ordinary driving, but for service in congested districts a still further reduction of the illumination is effected by switching the headlights in series, which



HILL UTILITY AUTOMATIC TIRE PUMP

cuts down the voltage and consequently the brightness of the lights. At the same time the current consumption is cut down proportionately and the employment of side lights is rendered unnecessary.

Small Motor Car Refrigerator.

A motor car ice-box that can be carried on the runningboard or trunk rack and will contain sufficient ice and provisions for a day's outing is manufactured by the Western Refrigerator & Mfg. Co., St. Louis, Mo., in two styles, either listing at $6.50.

The only real difference between the two is that one has two compartments, one for ice and one for dry storage, while the other has a single compartment with a shelf over it. Both have the same total capacity for ice, provisions and so on.

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In Salesroom and Garage

The George C. Brinkman Motor Car Co., St. Louis, Mo., has been reorganized, the capital stock being increased from $5,000 to $50,000, fully paid. George C. Brinkman was elected president, general manager and treasurer of the company; William F. Brinkman, his father, was chosen vice-president, and Walter J. Hall was elected secretary. The company distributes the National, Havers and Lyons-Knight pleasure cars, and the Smith-Milwaukee, Mack, Saurer, Hewitt and Lippard-Stewart trucks.

The A. G. Ilseng Motor Car Co. has let contracts for the erection of a $15,000 two-story brick garage at Fourth and Throckmorton streets, Fort Worth, Tex. The ground floor will be occupied by the offices and showrooms and the upper floor by a repair-shop and storage room.

The Electric Garage is the style of a new enterprise at 2307 Church street, Galveston, Tex. It is under the management of G. W. Robinson and E. B. Barnett, formerly with the Brush Electric Co. Electrical appliances and storage batteries will be stocked.

Edward Colyar, Manitowoc, Wis., has entered the garage trade in Brillion, Wis., with Adolph Vallesky, of Collins. They have named the business Brillion Garage, succeeding the Calumet Auto Co. They have secured the Overland agency.

The Shreveport Overland Co. has been formed in Shreveport, La., to handle the Overland line in the northern part of that state. The company, which also has the Franklin agency, is erecting a garage and repair-shop on Spring street.

The Reid-Blickley Automobile Co., Bond avenue and Michigan street, Grand Rapids, Mich., has changed its name to Reid Auto Co. Blickley has withdrawn and started in business for himself at Jefferson avenue and State street.

Piper & Son is the style of a new manufacturers' agency at 431 North Capitol avenue, Indianapolis, Ind. It will handle automatic screw machine parts, steel stampings, malleable castings and machined motor car parts.

P. A. Thorin and D. H. Mylander have formed a partnership in Florence, Wis., and will open a repair-shop at 312 East Genesee street. The firm will operate under the name of Iron River Motor Car Co.

F. B. Russell and R. S. Cutting, Swanton, Vt., have formed a partnership under the name Russell & Cutting. They have the Buick agency and have leased the Flanders Garage on Main street.

Motorcraft Stores is the style under which the A. C. Eveland Co. will operate at 1716 Broadway, Superior, Wis. In addition to motor cars, motorcycles, tires and accessories will be stocked.

The Briscoe Sales Co. has been formed in Jackson, Mich., by F. S. Rowan and C. R. Day to handle the Briscoe. Salesrooms have been opened at 141 Pearl street West.

A new garage is being erected on Virginia avenue, Follansburg, W. Va., for J. M. Johnston & Sons. It will be modern throughout and will include a repair-shop.

Theodore V. Bethke and Herbert S. Inbusch, Milwaukee, Wis., have formed a partnership to act as state distributer for the Hassler shock absorber for Ford cars.

David Houston, Boston, Mass., has opened a sales and service station at 66 Stanhope street. He has the entire New England territory for the R. C. H.

The Jones & Loftin Co. has established headquarters at 722 East Houston street, San Antonio, Tex. The company has the agency for the Detroiter.

The Phillips Machine Shop & Garage has recently been organized in Jackson, Mich. It is located at North Jackson and Van Buren streets.

Joseph E. Murphy is erecting a concrete garage, 50 x 100 feet, on East Diamond alley, Ashland, O. It will be ready September 1.

A. J. Anderson has entered the tire business at 117½ North Lawrence avenue, Wichita, Kan. Republic tires will be stocked.

The Square Deal Garage & Welding Co. has taken over the business of the Barclay Street Garage, Youngstown, O.

R. W. Immache has entered the trade at 4347 Olive street, St. Louis, Mo. He has the agency for the Stutz.

The Lampman-Brown Garage, Edgerton, Wis., has been purchased by Mabbett & Stark.

MOTOR CAR AGENCIES RECENTLY ESTABLISHED

Place	Car	Dealer
Muscatine, Ia.	Cole	Denham & Smalley Motor Co.
Rochester, Minn.	Cole	West & Fostier
Sabetha, Kan.	Cole	Mishler Bros.
Sandusky, O.	Cole	W. C. Waterfield
Sebring, O.	Cole	Sebring Auto & Repair Co.
Tornnto, Ont.	Cole	The Republic Motor Car Co. of Canada, Ltd.
Ottawa, Kan.	Cole	Troup Brothers
Akron, O.	Cole	Summit Auto Co.
Council Bluffs, Ia.	Cole	C. H. Robertson
Dayton, O.	Cole	C. W. Hoffrit Sales Co.
Eldon, Mo.	Cole	Ed. C. Weeks
Eldora, Ia.	Cole	Emeny Auto Co.
Ferry, Ia.	Cole	W. J. Cole
Gainesville, Fla.	Cole	Gainesville Motor Car Co.
Halls Summit, Kan.	Cole	H. W. McFadden, Jr.
Joliet, Ill.	Cole	H. B. Schler
Mankake, Minn.	Cole	Laurie Marx
Martinsville, Ind.	Cole	Martinsville Auto Co.
Montreal, Que.	Moon	Savigny & LaLonde
Mystic, Conn.	Franklin	Mystic Auto Station
Des Moines, Ia.	Franklin	Johnston Motors Co.
St. Louis, Mo.	Stutz	Stutz Automobile Co.
Seattle, Wash.	Mercer	Pacific Coast Agency
Memphis, Tenn.	Buick	The H. A. White Auto Co.
Erie, Pa.	Pullman	Erie Penn Auto Co.
Manchester, N. H.	Pullman	H. L. Lamprey
Worcester, Mass.	Pullman	Peter Welin
Toronto, Ont.	Pullman	R. C. Todd, Todd's Garage
Dover, N. H.	Pullman	Granite State Garage
Charlotte, N. C.	Pullman	Auto Sales Co., Inc.
Orofino, Ida.	Detroiter	W. T. Bennell
Portland, Ore.	Jeffery	Frank C. Riggs
Phoenix, Ariz.	Jeffery	McArthur Brothers
Cleveland, O.	Maxwell	W. H. Barger Co.
Boston, Mass.	Lozier	Leghorn Motor Car Co.
Hartford, Conn.	Herff-Brooks	E. H. Harris
Hartford, Conn.	Stearns	The Britton Co.
Kalamazoo, Mich.	Studebaker	L. E. Kraft
South Bend, Ind.	Overland	Overland-South Bend Co.
Providence, R. I.	Paige-Detroit	J. C. Tucker Co.
Providence, R. I.	Hudson	R. W. Powers
Beaumont, Tex.	Kissel	Thomas Van Auken Co.
Calais, Me.	Kissel	William Alexander
Clinton, Ia.	Kissel	C. A. Fay
Concord, Mass.	Kissel	Torry & Vialle
Hackensack, Pa.	Kissel	Peoples Express & Trans. Co.
Havana, Cuba	Kissel	Julian P. Abren
Jamaica, L. I.	Kissel	Richard Van Sicien
Lamoille, Ill.	Kissel	Chas. H. Wells
Lanesboro, Minn.	Kissel	Torger Elstad
Middleton, N. Y.	Kissel	Central Garage Co.
New Durham, N. J.	Kissel	Arthur T. Bruce
Omaha, Neb.	Kissel	Noyes Auto Co.
Passaic, N. J.	Kissel	Sheely Motor Co.
Portland, Me.	Kissel	E. F. Gellerson, c/o Gellerson Lbr. Co.
Santa Ana, Cal.	Kissel	C. E. Isaacson & Son
Toronto, Ont.	Kissel	H. E. Rickettson
Tulare, Cal.	Kissel	W. A. Swal.
Tuscaloosa, Ala.	Kissel	J. T. Pullen
Alberta Lea, Minn.	Franklin	Hellie Auto Co.
Boston, Mass.	R. C. H.	David Houston
Hampton, Va.	Franklin	J. V. Bickford
Kingman, Kan.	Franklin	Arrington Lumber & Mercantile Co.
Nashville, Tenn.	Franklin	Chester Motor Car Co.
St. Louis, Mo.	Chandler	Lewis Automobile Co.
Detroit, Mich.	Briscoe	Lininger-McHugh Co., Inc.
Milwaukee, Wis.	Lewis	Stanley Steamer Co.
Toledo, O.	Lozier	Litchie Automobile Co.
Waco, Tex.	Hudson	Willis-Halff Co.

COMMERCIAL CARS

Birmingham, Ala.	Koehler	Drennen & Co.
Westbury, N. Y.	Koehler	Michael J. Knipfing
Sanitarium, Pa.	Koehler	W. L. Fourney
Houston, Tex.	Koehler	Young & Dwire
Augusta, Me.	Koehler	Chas. Floyd Smith
Philadelphia, Pa.	Garford	Garford-Phila Co.

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National SIX

ANNOUNCEMENT

Champion American Car

New Series

$2375

POSTAL TELEGRAPH – COMMERCIAL CABLES
CLARENCE H. MACKAY, PRESIDENT
TELEGRAM
CHECK
COUNTER No.
TIME FILED M
The Postal Telegraph-Cable Company (Incorporated) transmits and delivers this message subject to the terms and conditions printed on the back of this blank.
(DESIGN PATENT No. 40329)
SEND the following Telegram, subject to the terms on back hereof, which are hereby agreed to.

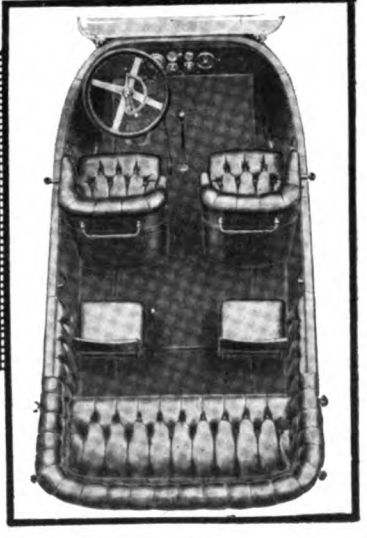
Motor World,
New York City.

Release announcement National New Series Six, as we are already to make deliveries. New series is another advancement - another chapter in National's history of quality designing. Characteristically National in beauty and smart outline. Our dealers have unanimously approved.

All the accumulated honor of National victories is represented all the experience of fourteen years successful building is incorporated. In short National reputation so faithfully earned and carefully guarded is here concentrated and offered in this new Six. Please print pictures. Request dealers not to delay. We have a liberal offer.

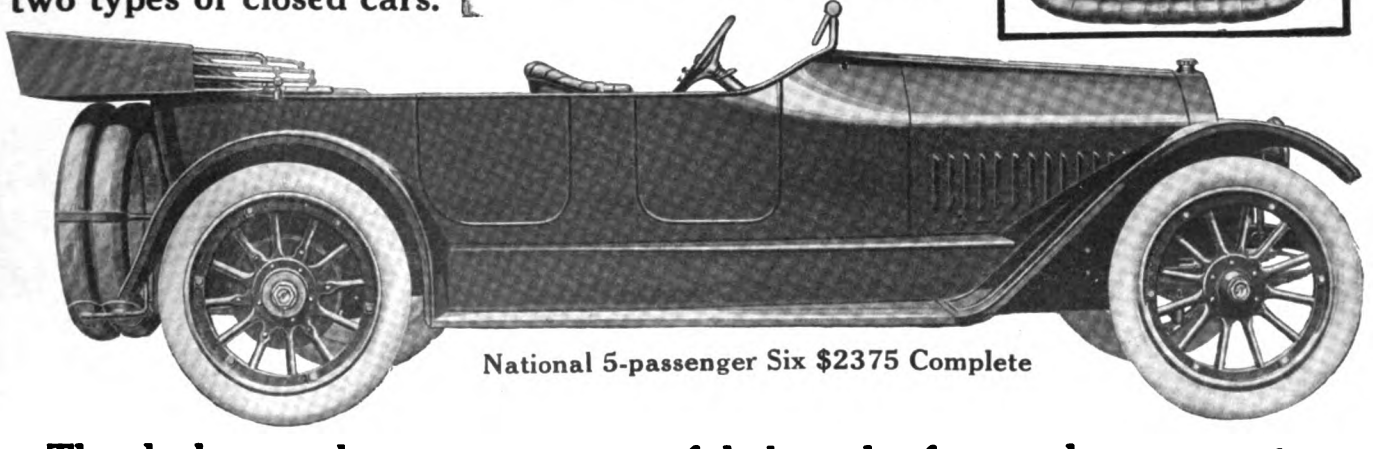
National Motor Vehicle Co.,
Indianapolis, Ind.

P.S. Our business for year ending July largest ever, even surpassing last years increase. prospects still better now.



Interior of Six Passenger Six Cylinder–

The new series National cars are built in 2-4-5-6 passenger open bodies, also in two types of closed cars.



National 5-passenger Six $2375 Complete

The dealer can be no more successful than the factory he represents.

National Motor Vehicle Company, Indianapolis, Ind.

Digitized by Google

Maxwell "25"

The biggest automobile value ever offered for less than $1,000. Our production of 60,000 cars makes the new price of $695 fully equipped (WITH 17 NEW FEATURES) possible.

1—Pure stream-line body.
2—Adjustable front seat.
3—Sims high-tension magneto.
4—Three-quarter elliptic rear springs.
5—Tire brackets on rear.
6—Spring tension fan.
7—Kingston carbureter.
8—Clear Vision Wind Shield.
9—Foot-rest for accelerator pedal.
10—Concealed door hinges.
11—Gasoline tank located under dash cowl.
12—Crown fenders with all rivets concealed.
13—Head lights braced by rod running between lamps.
14—Famous make of anti-skid tires on rear.
15—Gracefully rounded, double-shell radiator equipped with shock absorbing device.
16—Instrument board, carrying speedometer, carbureter adjustment and gasoline filler.
17—Improved steering gear; spark and throttle control on quadrant under steering wheel; electric horn button mounted on end of quadrant.

Automobile experts have refused to believe that anyone could produce a **Full Grown Five Passenger** really beautiful fully equipped car—a car with real high tension magneto—a car with sliding gear transmission—left hand drive center control, a car with practically every high priced car feature for less than $1,000.

Here it is. Here is a real automobile. Here is the easiest car to drive in the world—here is the greatest all around hill climbing car in the world. Here is an automobile to be really proud of.

With Electric Self-Starter and Electric Lights $55 Extra.

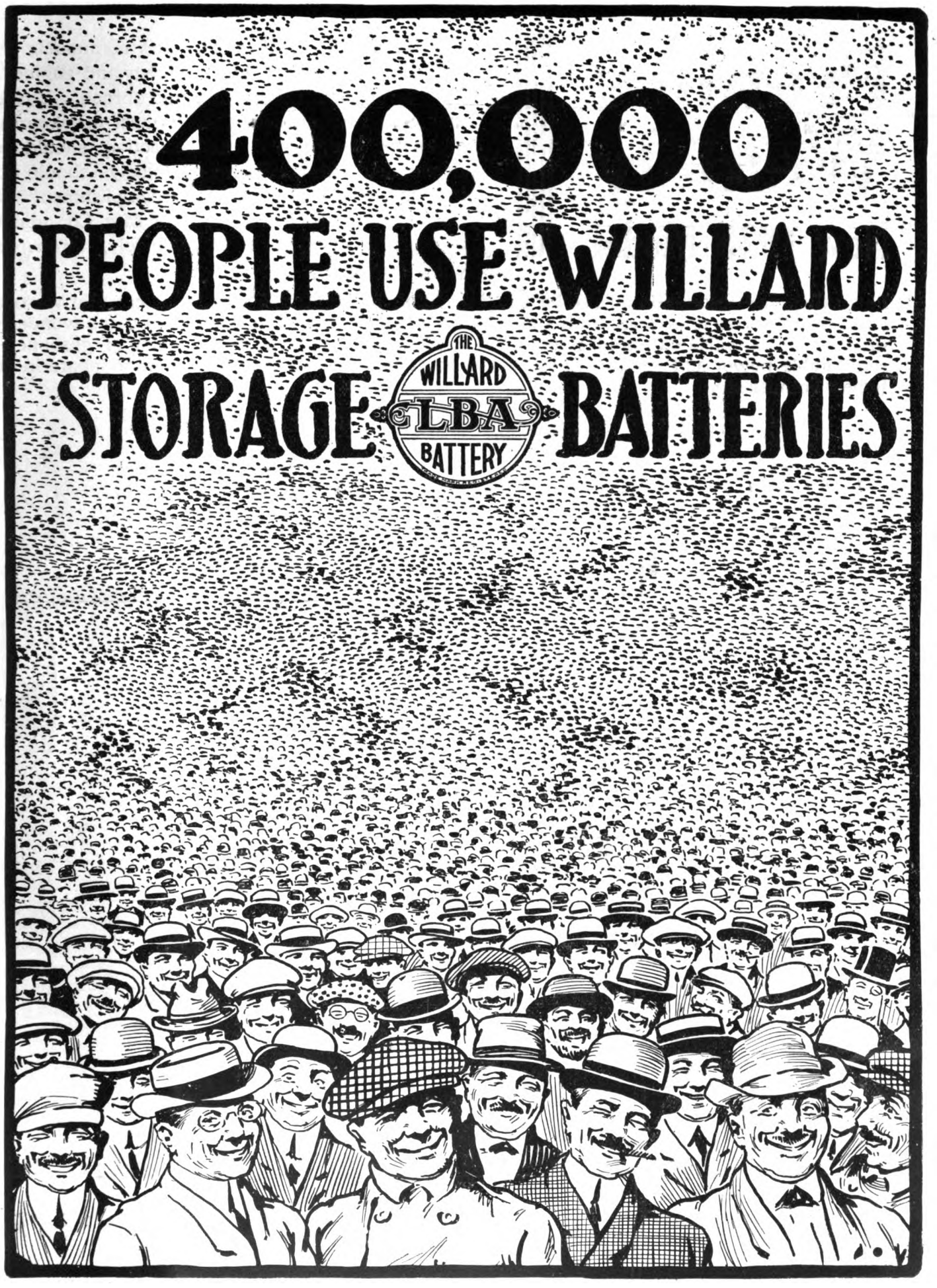
See this "Wonder Car" at the Maxwell dealer nearest you. Write at once for the beautiful 1915 Maxwell Catalog.

Dept. F MAXWELL MOTOR CO., INC., DETROIT, MICH.



With Electric Self Starter and Electric Lights $55 Extra

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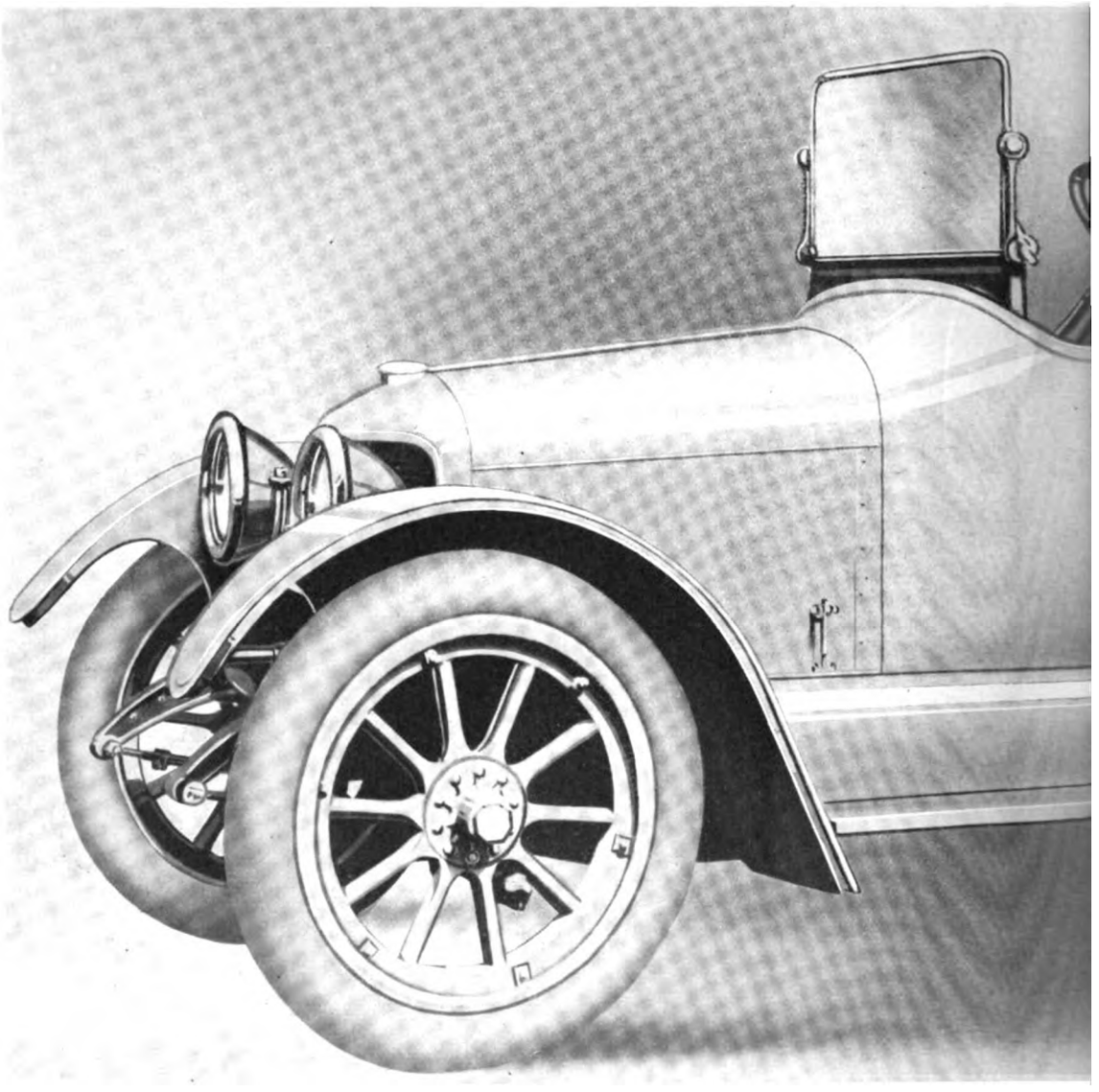
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Premier Weidely

New 1915 Model

THIS marvel of motor cars commands the admiration of leading motorists and engineers throughout this country and abroad. Everyone who is interested in the highest development of motor design, and car perfection, should get acquainted with the Premier Weidely—should ride in it and realize what a great accomplishment is to the credit of the Premier Motor Mfg. Co., and to the credit of George H. Weidely, Premier's chief engineer.

Illustration and description falls so far short in doing justice to this wonderful car that we urge you, Mr. Motorist, to arrange with the nearest Premier dealer to demonstrate the wonderful merit of this greatest car of all times. Test its roadability, its mileage per gallon of gasoline, its remarkable power and speed. Then we want ***your*** verdict. We want you to share in our honest enthusiasm.



Premier Motor Manufacturing

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The great interest and demand created by the Premier Weidely is due to ***merit.***

The Weidely motor has practically doubled the possible miles to be gotten from a gallon of gasoline.

It has greatly increased the possible power to be gotten from a given bore and stroke.

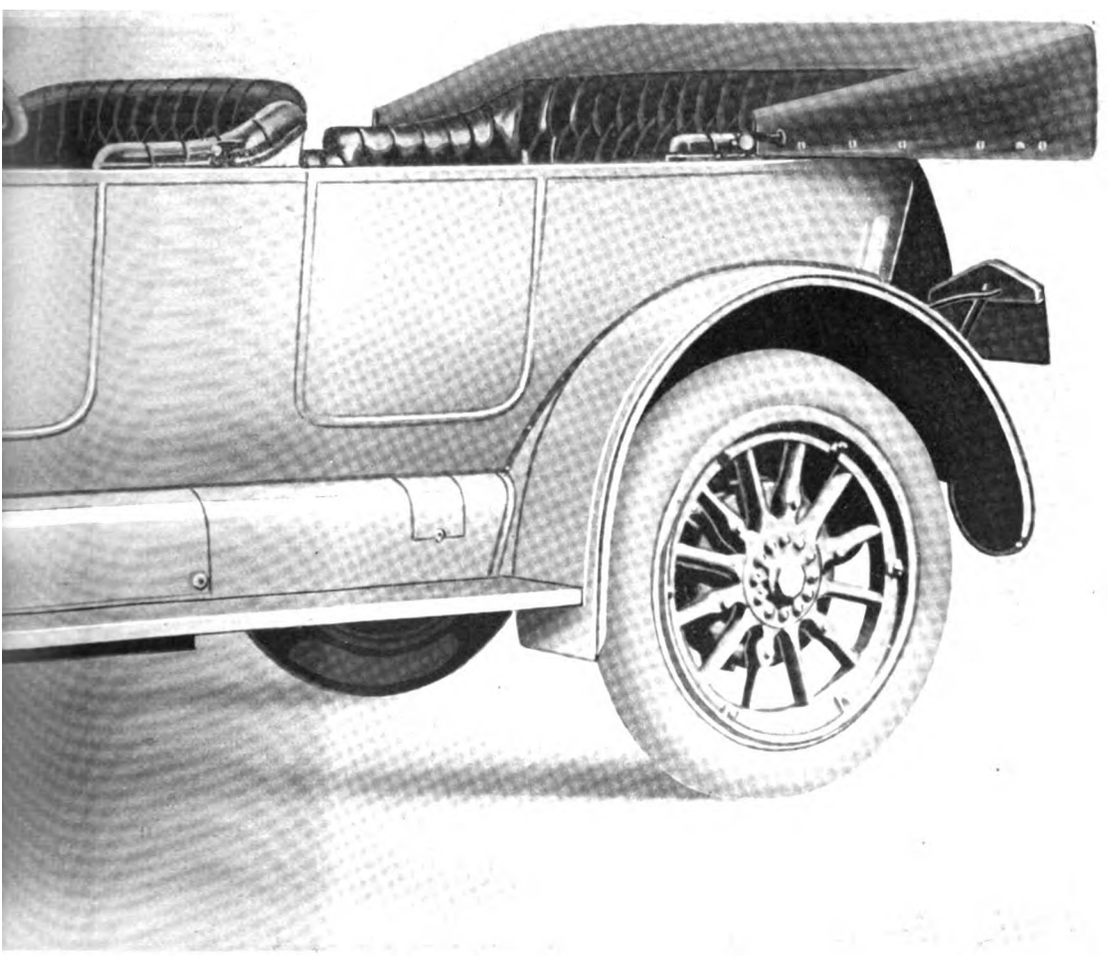
The Weidely assures the permanent superiority of the poppet valve type of motor.

Premier Weidely

$2700 f. o. b. Indianapolis

It is the most important development in the motoring world during the past ten years.

If you desire catalog with detailed specifications, and the name of nearest dealer, write us today.



Company Indianapolis, Ind.

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The "Discount" Bugaboo

Tire Discounts Work to Disadvantage of Dealer and Customer Alike

Let us, dealer and customer, get together and look this "special discount" proposition squarely in the face.

Let us see how the customer often pays more for a "special discount" tire—even **after** the "discount" is taken off—than the **list** price on some others.

Let us see how the dealer jeopardizes the confidence of his customers by offering "special discounts" which, in the very nature of things must be more or less elastic and optional.

How It Goes

The dealer is not to blame when he offers a special discount as an inducement in the sale of certain tires. The list prices on some tires are so high that dealers have to cut the price to make sales.

This is a condition of selling that has crept in to offset quality competition.

And even then "special discounts" do not truly serve their pretended purpose. Frequently the net price of a tire, even after the special discount is taken is more than the list price of a Goodyear tire.

But the customer doesn't realize it. Very often the dealer himself doesn't realize that he is really charging more.

But that doesn't help matters any.

Some Goodyear Prices

The same money that is asked for a 36 x 4½ inch tire of some other makes will buy a Goodyear 37 x 5 inch.

That means a half inch wider tire for the same money.

Some tires list so high that three of them cost more than four Goodyears. And some are so very high that they have to be "discounted" to get them down anywhere near where they should be.

The Goodyear Price Poster

The next time a "special discount" tire is under consideration, just sit down and figure out the net result.

In many cases it will call for more money than a Goodyear tire—even after the "discount."

You can tell this instantly by comparing the price with the Goodyear price which appears on the Goodyear price poster.

This poster shows the Goodyear prices, from the 28 x 3 inch to the 39 x 6 inch size.

These posters are welcomed by dealers everywhere. They tell at a glance the one Goodyear price, size for size.

They enable the dealer to know by how much more a special price exceeds the Goodyear price. It inspires assurance on the part of his customers.

There is confidence in the knowledge that Goodyear prices need no cutting. They are already down to rock bottom. It isn't necessary to water them to allow for false discounts under the guise of cut rates.

And confidence is one of the greatest factors in business. Kill it, and good business goes elsewhere.



The Goodyear Tire & Rubber Company, Akron, Ohio

Toronto, Canada **London, England** **Mexico City, Mexico**

Dealers Everywhere. Branches and Agencies in 103 Principal Cities
Write us on Anything you Want in Rubber

(1785)

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Remove the Glare

from your headlights without lessening their power of penetration.

SAFETY FIRST HEADLIGHT SHADES operated from the driver's seat by means of a foot device enables you to change from the long range glaring light, so dangerous to your car and its occupants when you meet the other car on the country road, to a powerful mellow driving light with the glare absolutely eliminated. With the shaded light you also have powerful side lights enabling you to drive on a narrow dark country road with sharp curves clearly illuminated fifty feet on each side.

SAFETY FIRST HEADLIGHT SHADES comply with the demands of the ordinances passed and being passed in all prominent cities, relative to glaring headlights.

Approved by auto clubs and all city authorities.

Will penetrate fog or dust. Wind, rain or mud will not effect any part of the shade.

THE SAFETY FIRST HEADLIGHT SHADES can be attached to any make of car equipped with gas or electric headlights in one half hour's time.

Dealers:

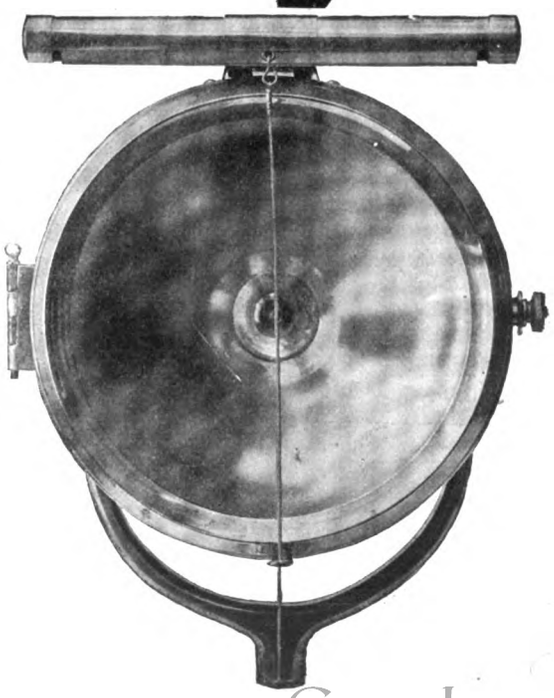
THE SAFETY FIRST HEADLIGHT SHADES offer you wonderful selling possibilities. The law and man's first instinct, self preservation have compelled a demand that only the Safety First Headlight Shades can successfully fill. You can sell every motorist in your city. The price is reasonable—$10 and the margin of profit to you generous.

Write us for special offer for demonstrator, discounts and circulars

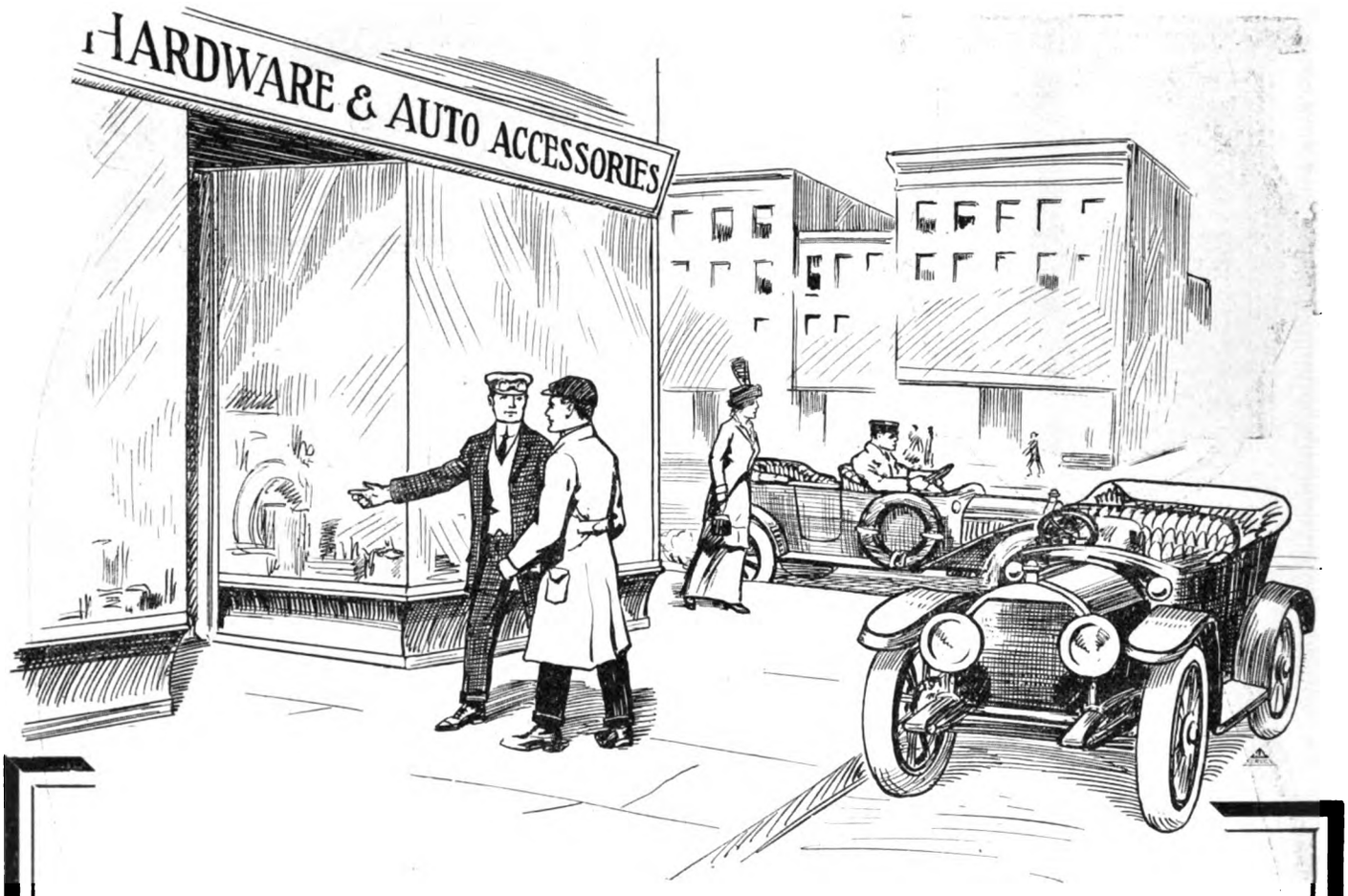
SMITH BROTHERS

General Sales Agents

Box MW Auburn, N. Y.



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"Certainly—the Hardware Store for Your Accessories and Supplies"

You will find the hardware store the most convenient place for you to buy them.

When you visit a hardware store you will be assured of courteous treatment, intelligent service and a complete stock of accessories and supplies from which to make your selection.

Already thousands of motorists know they can be better satisfied by trading at hardware stores, and this accounts for the remarkable increase in the number of hardware stores which are carrying these goods. They are the logical and natural distributors of them.

Visit your nearest hardware merchant as soon as possible and inspect his line of accessories. You will find his prices reasonable as he intends to stay in one place and grow.

Mr. Manufacturer

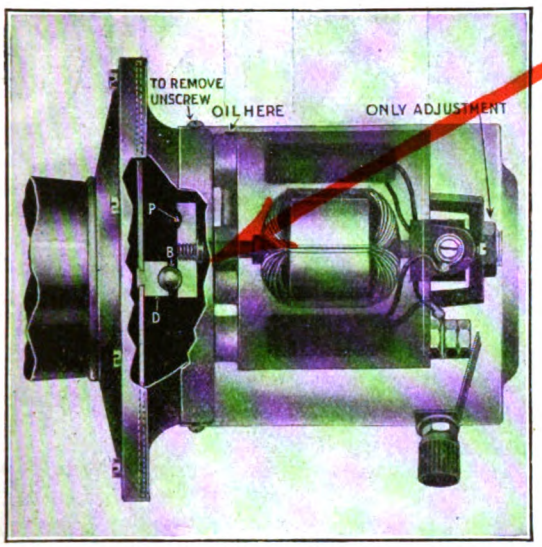
The preeminence of the hardware merchant as a distributor of automobile supplies has been driven home in many ways to manufacturers. They know the hardware merchant is a good advertiser, a good salesman and a good credit risk, and these factors influence them to seek out hardware merchants to handle their goods.

Perhaps you have not gotten in touch with as many hardware merchants as you would like. Let us show you how to interest these men. It is a part of our service.

"Hardware Age" is the leading business paper in its field. It reaches over 17,000 hardware merchants every week—a big army to which you can make your appeal at a very small cost. A sample copy and full information gladly sent. Write today.

Hardware Age, 239 West 39th St., New York

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This Is Why engineers of five leading factories have specified the SAFEGUARD for standard equipment.

¶ It's a mechanical masterpiece. Ball and Rotor eliminate friction.

SAFEGUARD
MOTOR DRIVEN HORN

Model B



Price, $10.00

¶ Our patented Ball and Rotor construction – an exclusive SAFEGUARD feature—thrusts the diaphragm forward, relieving wear on the parts and lightening the work of the motor. Therefore the SAFEGUARD has

Less Current Consumption ***Less Wear on Motor Bearings***
No Cracked Diaphragms ***Clearer Tone***

FORD SPECIAL Baby Safeguard (Motor Driven)

¶ Designed for FORDS and other small cars. Will operate on 4 dry cells and consumes a minimum amount of current. Extremely loud and penetrating.



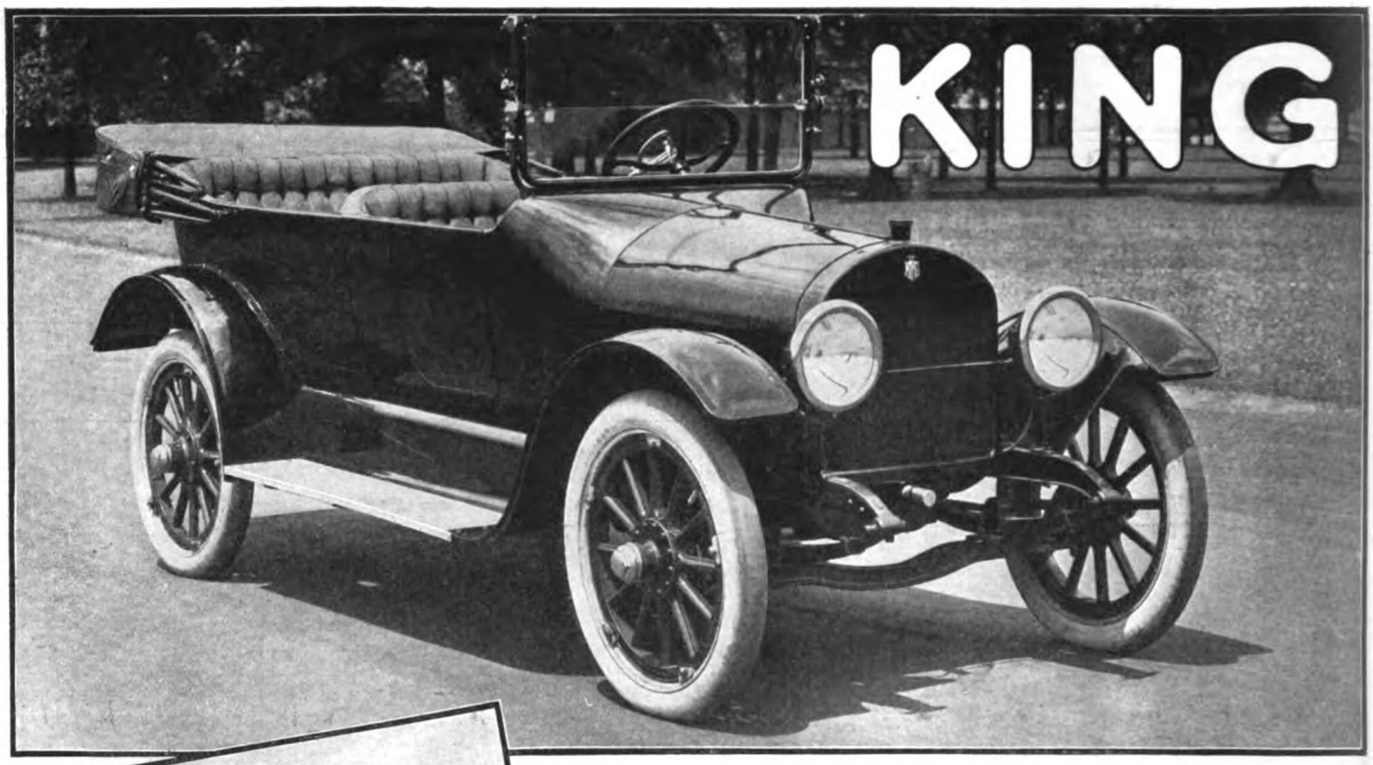
Model F, Price $7.00

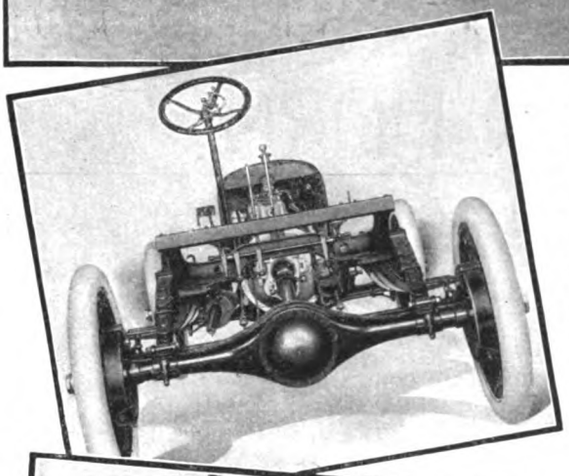
Good proposition for dealers. Write at once.

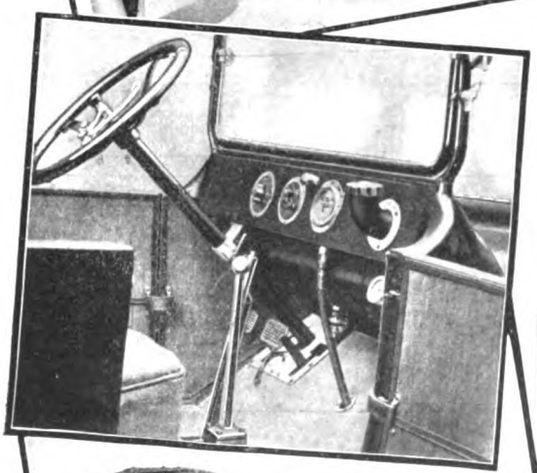
DUPLEX ELECTRIC MFG. COMPANY, Pittsburgh, Pa.

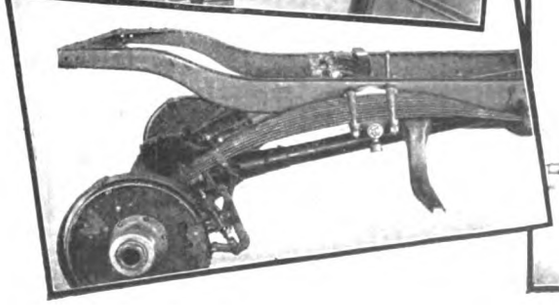
Western Representatives, Stewart Auto Accessories Co., Chicago, Ill.
Export Representatives, Auto Supplies Export Co., New York

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SEE THIS CAR and if possible, persuade a good motor car mechanic to go with you. Its stream-line beauty and roomy luxury captivate, but we want you to go over the chassis with a man who KNOWS machinery.

MODEL C, "The Car of No Regrets." Everything you want in an automobile at a price that makes the motor world wonder

$1075 WITH EQUIPMENT Famous Ward Leonard Starting and Lighting System, $90 net additional. Prices F. O. B. Detroit

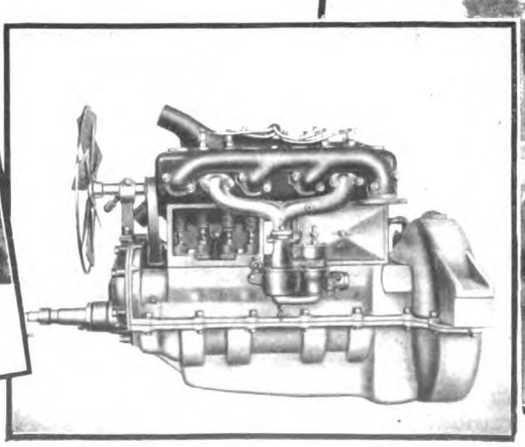
HAS CANTILEVER "COMFORT" SPRINGS

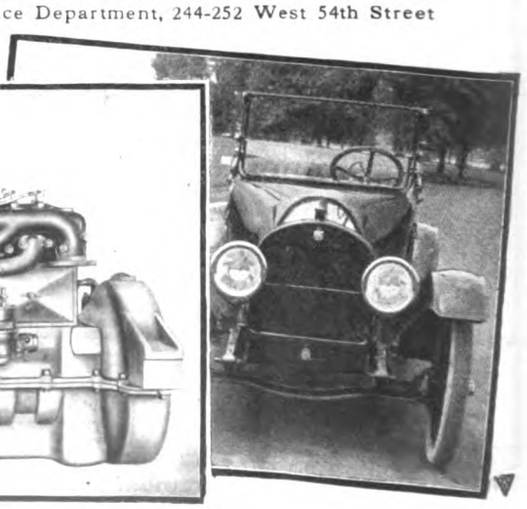
30-35 HORSE-POWER. :: :: :: TOURING CAR AND ROADSTER

DEALERS! Wire now for territory on this new model
The KING'S 1914 success is about to be repeated manifold

KING MOTOR CAR COMPANY, DETROIT, MICH.

New York Agency and Showroom, Broadway at 52nd Street
New York Service Department, 244-252 West 54th Street





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The BOSCH LIGHTING System

has distinctive and exclusive features and all the earmarks of Bosch Quality—of Course

The Bosch Lighting System provides in simple form, an ideal method for lighting the highways and byways, as well as the car's interior.

The Voltage Control is practically ideal, holding the current constant at all speeds, whether the road is rough or smooth. In consequence, the "Bosch Light" is even at all times and is free from flickering flares or sudden periods of dimness. It projects far on the road ahead and well to the sides of the roadway. It is mellow in color and free from that uncomfortable, white, intense and blinding glare.

The Battery is automatically charged but never subjected to undue current charges which would tend to strain the unit and thereby make it worthless. With the Bosch Lighting System the usual battery troubles, due to overcharging, are entirely eliminated.

Head Lamps, side lamps, tail and dash lamps, special cable, switches and control box are all of Bosch manufacture. All are included in the complete Bosch Lighting System. There is nothing lacking, not even the quality that adds so much to general satisfaction and service.

Any Car can be made "Electrically Bosch" throughout by having it Bosch Lighted, Bosch Started, and its combustion charges Bosch Ignited. The "Bosch Light," the Bosch Starter and the Bosch Ignition Systems are so varied in design and size that no car ever need be sold or bought without being Bosch-Equipt.

Be Satisfied. Have your car "Electrically Bosch" throughout

BOSCH MAGNETO COMPANY, 224 W. 46th St., New York

Chicago :: Detroit :: San Francisco :: Toronto

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MAYO RADIATORS



EVENTS have proven that more courage and ability are required to imitate Mayo quality than to copy Mayo design. Quality is the basis on which Mayo Radiators have been built and will continue to be built.

MAYO RADIATOR COMPANY

New Haven, Connecticut

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Ford Dealers! Get this Extra profit

YOU can sell a Stewart Speedometer with special Ford equipment to every Ford owner. You can sell this "Stewart" to the hundreds near you who already own Ford cars.

If *you* don't do it, *somebody else will.* The Ford owner finds out in mighty short order that he's headed straight for trouble if he has no speedometer to keep him from exceeding the speed law. He knows that satisfactory tire adjustments cannot be had unless there's a speedometer to prove that his tires haven't given him the proper mileage. He knows that a Ford, like any other car, cannot be run economically unless gasoline and oil consumption per mile is checked by a speedometer.

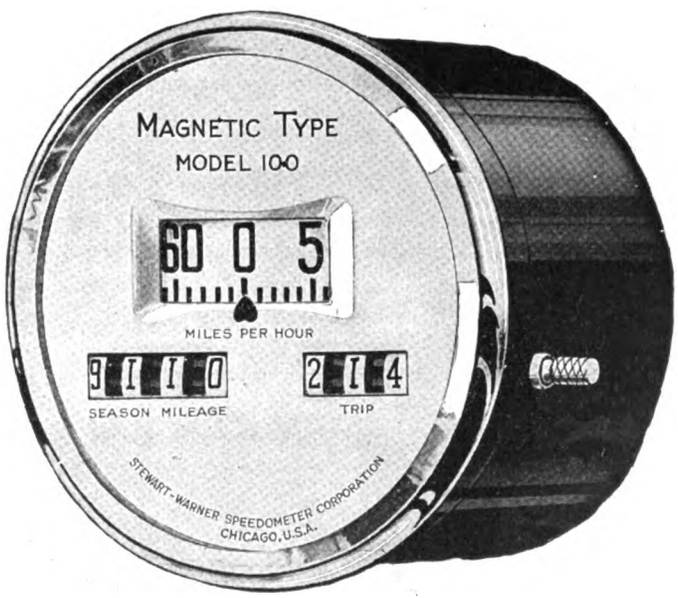
Ford owners are buying this Stewart by the hundreds. Dealers all over are making these sales one after the other. They're making extra profits and making them fast and easily. Go after this business. It's easy selling. There are no arguments to buck. Ford owners MUST have a speedometer and they will take no other type of speedometer. They will have nothing but this new

Stewart Speedometer

that is built on the true and proved best Magnetic Principle. It has the regular 60 mile rotating speed dial, 10,000 mile Season Odometer, 100 mile Trip Odometer with device for resetting to any mile or tenth, jeweled bearings, and a case finished in deep jet lacquer with brass trim to match the Ford car. We help you and make selling a walk-away by backing you in a **30 day free trial offer** that nobody can resist. The retail price, complete and fully guaranteed, is only - -

$12

Go for this business right now. Write us today for our Dealer's Proposition.



Stewart-Warner Speedometer Coporation

Executive Offices: 1949 Diversey Blvd., Chicago

Factories: Chicago and Beloit, Wis.

11 Branches. Service Stations in all cities and large towns.

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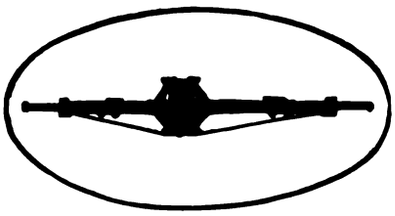
"American" Axles

are the

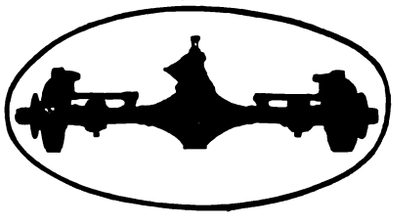
Pioneers



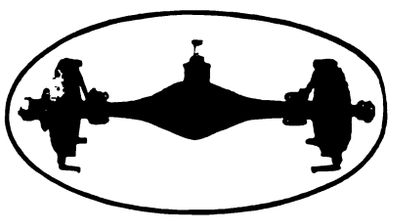
FIRST in the Field. We made the First axles for the First motor cars. Many years of making anti-friction axles for carriages and wagons had qualified us to lead the way.



FIRST in Chain Drive. This "*American*" Axle was the **last word** when we first brought it out years ago. Compare it with our latest types!



FIRST in Bevel Drive. We were the ORIGINATORS of successful bevel drive axles, a type since used by practically every motor car manufacturer in the **world.**



FIRST in Worm Drive. We pioneered this type in America, and its present-day popularity is the direct result of our painstaking design and accurate manufacture.



FIRST in Spiral Bevel. We were the First axle builders to produce Spiral Bevel axles for the trade. Before offering them, we spent many months of time and many thousands of dollars in perfecting a structure that would properly support this peculiar form of bevel gear.

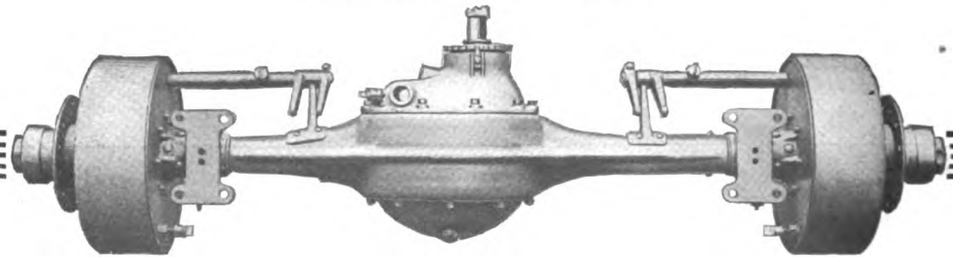
Always First in design; First in constantly anticipating the axle needs of motor cars; and First in the high development of craftsmanship and machinery, "*American*" Axles today are

Further in the Lead Than Ever Before!

Licensed Under The Kardo Company Patents

THE AMERICAN BALL-BEARING CO., Cleveland, Ohio

Pioneer Axle Builders of America

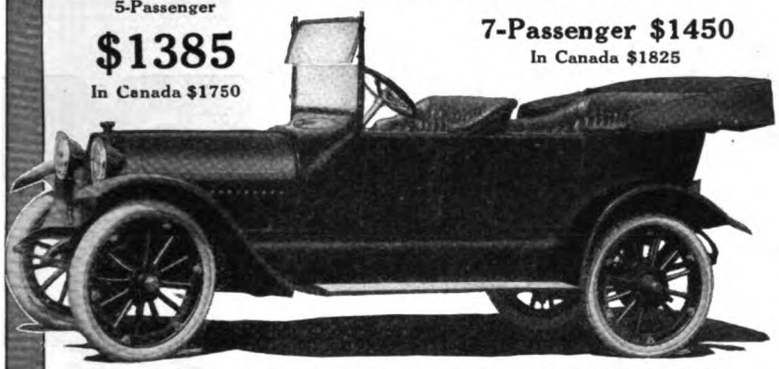


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The New Studebaker Automobiles

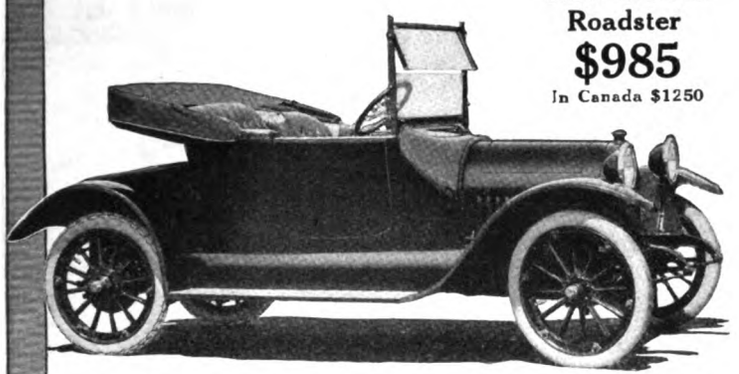
The NEW SIX
5-Passenger
$1385
In Canada $1750

7-Passenger $1450
In Canada $1825



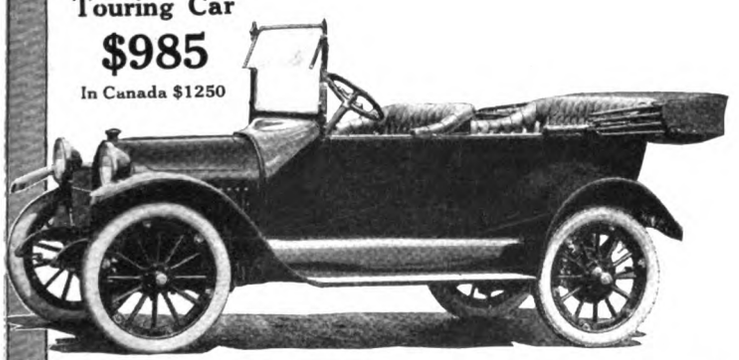
Powerful, silent, small bore, long stroke motor, 3½ x 5 inches; 150 pounds lighter; 15 x 2½ inch brakes; 34 x 4 inch Goodrich tires on Q. D. demountable rims, Safety Tread on rear; more room in front and rear; one-man type top; full-floating rear axle; full equipment of Timken bearings; 24 finishing operations; wheelbase 121 inches.

New FOUR Roadster
$985
In Canada $1250



A three-seated Roadster that actually seats three grown persons in perfect comfort. Driver's seat set slightly forward. Special top. Baggage compartment at rear, etc. Same general specifications as FOUR Touring Car.

New FOUR Touring Car
$985
In Canada $1250



Powerful, silent motor, 3½ x 5 inches, small bore, long stroke; crowned fenders; special dimming headlights; 100 pounds lighter; 12 x 2¼ inch brakes; generous room; 33 x 4 inch Goodrich tires on Q. D. demountable rims, Safety Tread on rear; one-man type top; full-floating rear axle; full equipment of Timken bearings; 24 finishing operations.

STUDEBAKER dealers, everywhere, are of the progressive, prosperous and permanent type of business men.

They enjoy steady business day in and day out, year in and year out.

They are not in the motor car business today and some other line of business tomorrow.

They know motor car values and the ins-and-outs of the business.

That is why they are Studebaker dealers.

Studebaker cars are manufactured practically complete in Studebaker plants.

The Studebaker organization is, we believe, the most efficient unit in the entire motor car industry.

Its co-operation with Studebaker dealers along the line of sales, of service and of advertising is broader in its scope and more helpful in character than is the co-operation enjoyed by any other class of dealers.

That is why Studebaker Dealers are invariably successful dealers.

That is why Studebaker territory is at a premium.

That is why there is in many parts of the country an actual waiting list of responsible dealers anxious to secure Studebaker representation.

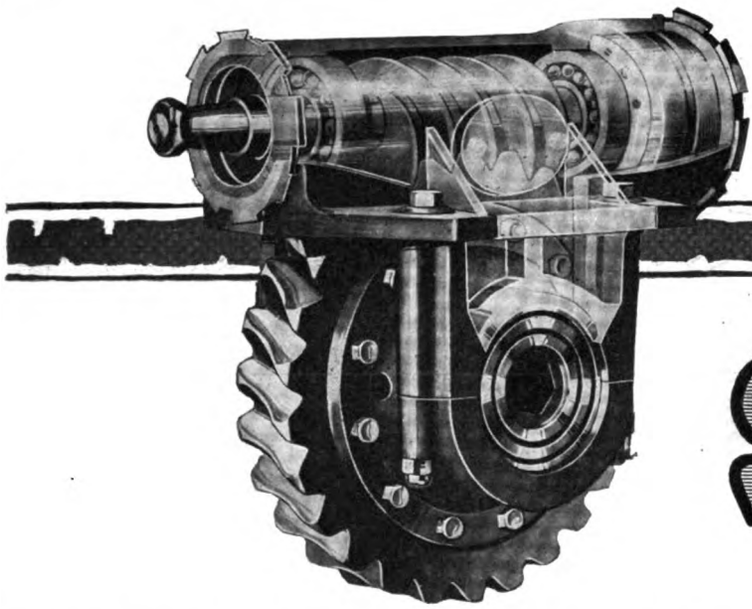
Many divisions and subdivisions of territory are being made in various parts of the country, making a few very desirable openings for responsible dealer connections.

Dealers visiting Detroit are cordially invited to inspect the Studebaker plants and investigate Studebaker manufacturing and sales methods.

STUDEBAKER, Detroit

"Quantity Production of Quality Cars"

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SHEL

IT isn't alone the question of superior design that has established Sheldon Worm Gear Axles as the most efficient axles of this type obtainable, for manufacturing methods and selection of materials are on the same high plane as the efforts of the engineering department.

WORM GEAR AXLES

As we have said time and again in the past, primarily, the Sheldon Worm Gear Axle was designed irrespective of cost or other conditions for the sole purpose of producing the most efficient axle it was possible to produce. Sheldon Axles are designed and built with the sole idea of giving service and not for the purpose of selling bearings.

While it is true, that probably the most important detail in Sheldon Axle construction that makes for the superior efficiency of these axles, is the fact that the thrust load of the worm itself is carried by double thrust ball bearings, there are still a great many other points of superiority that enter into the general all around efficiency of the axle itself—and in this particular piece of copy we are itemizing briefly some of the characteristic features of Sheldon Worm Gear Axles.

Special Features

The imported worm and worm wheel are made of a special heat treated worm steel and ground by special machinery. The worm wheel face is of special formula bronze.

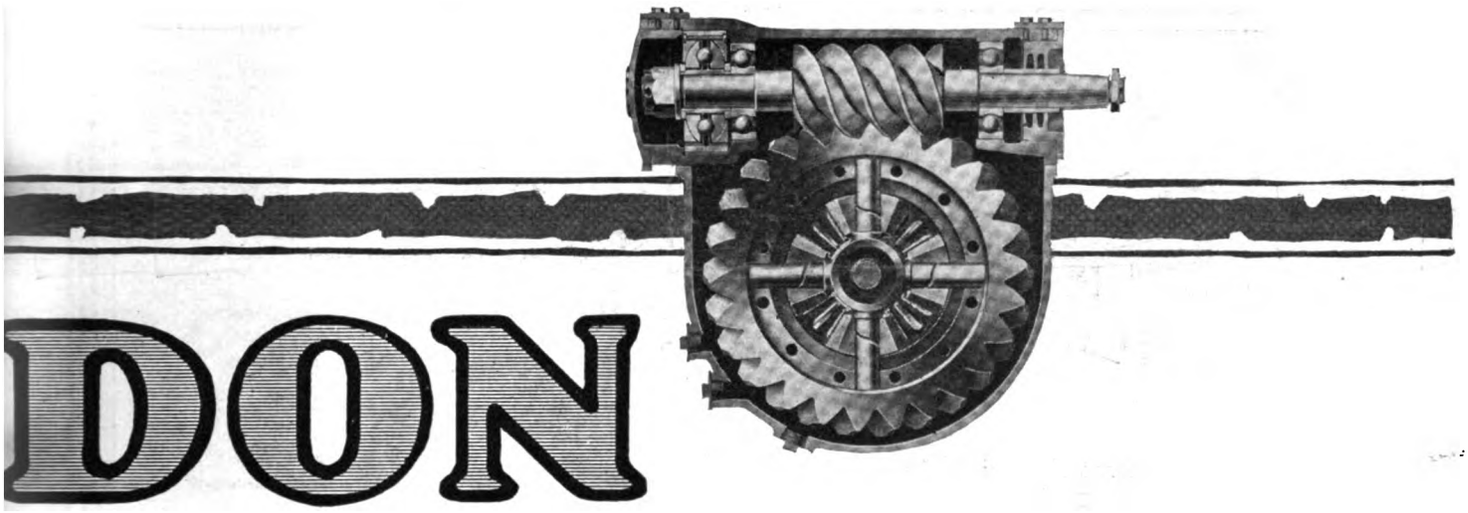
The worm carrier is a very substantial casting machined by special jigs and fixtures to receive the worm and worm wheel in perfect alignment. The methods employed in the machining of the worm carrier insure positive adjustment at all times and render the assembled unit absolutely fool-proof. By following the particular methods in practice in the Sheldon shops and by using ball bearings in the assembly we are able to furnish the truck buyer with a worm gear job in which there is absolutely nothing to get out of adjustment, a job which, therefore, cannot be adjusted.

All differential gears and pinions are 3½% nickel steel, heat treated. The differential spider is drop forged in 3½% nickel steel heat treated and ground to size. The differential is mounted on double row

SHELDON AXLE CO.,

Makers of Springs and Axles for Heavy Duty Service for more than 50 years

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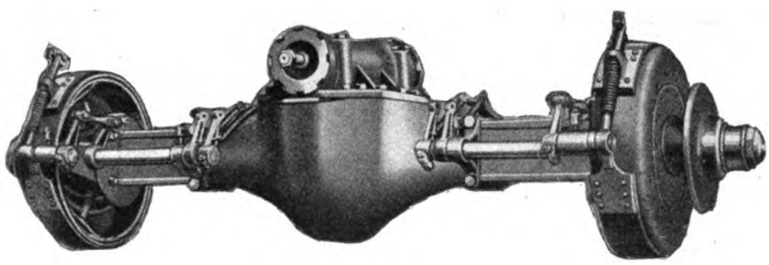
annular bearings. The brakes are of the internal self-intensifying and external wrap up type.

The axle shafts are 3½% nickel steel heat treated and accurately proportioned aiming at a uniform stress throughout.

The axle housing is a one piece casting essential in commercial vehicle work for it presents the minimum number of joints to be affected by extreme road shocks due to operating on solid tires.

date the extreme thrust load prevents wedging, undue wear and consequent necessity of adjustment present in other types of bearings, and you have briefly the underlying cause for the plain statement—

That the Sheldon Worm Gear Axle will deliver to the road wheels a greater percentage of power applied than any other axle on the market.



Special attention is called to the lubrication of the worm itself. There are three oil plugs. The lower plug we designate as the drain plug and is to be used for drawing off the old oil and cleaning out any sediment that may have deposited in the bottom of the housing. The intermediate plug is what we call the dangerous oil level and is placed at a level below which the oil must never be allowed to drop. The top plug is the safety oil level. The axle in all cases should be filled to this point before using.

There is no gainsaying the fact that ball bearings are the greatest reducers of friction of any type of bearing. Combine the truth of this statement with the further fact that the use of ball bearings to accommo-

It should be borne in mind that the general conditions both of design and construction which typify Sheldon Worm Gear Axles as the superior of all axles from a standpoint of efficiency are just ordinary routine conditions throughout the entire Sheldon plant.

Sheldon front axles, Sheldon springs, Sheldon brake and radius rod equipments are all produced under the same ideal engineering and manufacturing conditions as are Sheldon Worm Gear Axles. First has been the question of efficiency, the greatest service to the consumer in each and every Sheldon product. Cost, type and methods have all been subservient to this primary idea.

Wilkesbarre, Penna.

CHICAGO: 122 S. Michigan Blvd. SAN FRANCISCO: 444 Market St. DETROIT: 1215 Woodward Ave.

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EISEMANN

Insofar as the automobile industry itself is concerned Eisemann ignition systems perform a double function—they not only represent the acme of efficiency, dependability and durability in their mechanical performance but through this performance they become a potent selling factor.

To the pleasure car owner they represent the greatest degree of comfort because of the mere fact that under the hardest tests of service they perform best.

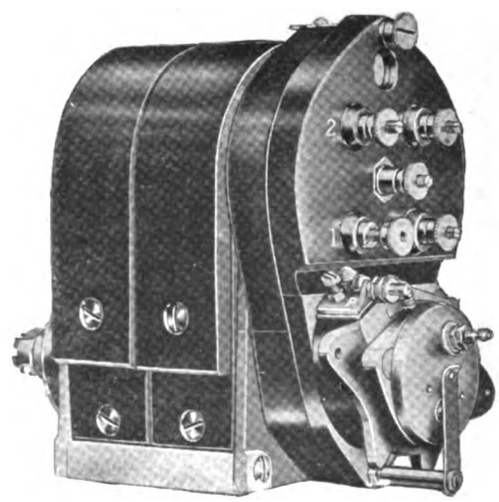
To the commercial vehicle operator they represent great saving both in time and operating cost. First because of being efficient, dependable and durable they obviate the necessity of care and attention, and in the second place because of their inherent characteristics they assist materially in the economical operation of the truck insofar as fuel and oil costs are concerned.

Eighty-three manufacturers of motor driven apparatus in the United States show their conviction of the truth of this statement by depending upon Eisemann for their regular ignition. Of these eighty-three manufacturers fifty are producers of trucks.

Eisemann Products As a Sales Asset

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STUTZ

In front [illegible] employee in [illegible] Fedders shops a warning sign is posted—"QUALITY FIRST!" so as to keep Fedders policy fresh in the minds of Fedders employees every minute of the day and every day of the year. The result of quality in every phase of radiator building has resulted in a quality product, and because Fedders Radiators are quality products, there are on the books of the Fedders Manufacturing Company many accounts both for pleasure cars and trucks which have been there consistently for years.

If quality as a watchword has been instrumental in helping us to build a successful radiator business, will not Fedders quality Radiators be instrumental in helping you build a successful car?

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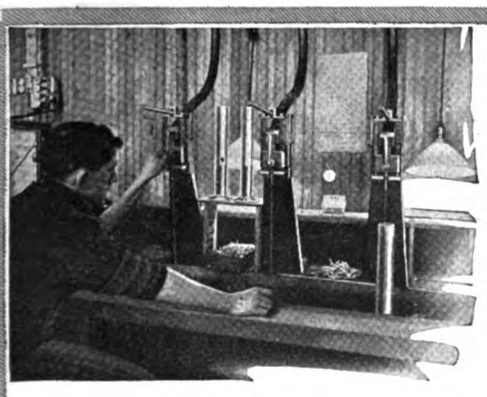
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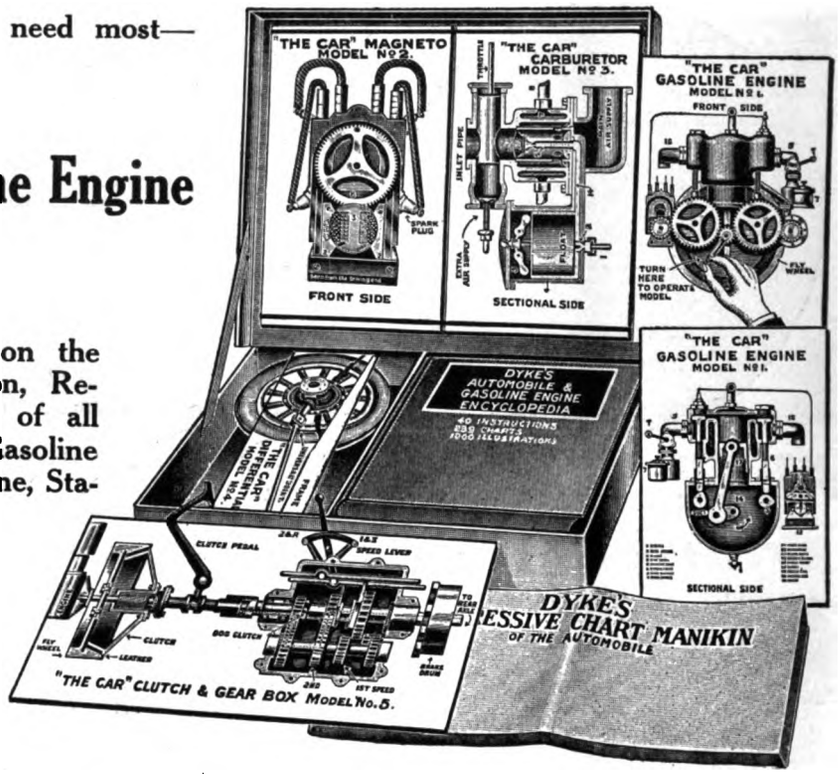
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ON THE WORKING MODELS YOU GET THE ACTUAL PRACTICE, see the actual INSIDE operation and learn the principle. The Instructions then explain and illustrate the variance in construction of the different parts in general use.

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THE ENCYCLOPEDIA contains 560 pages, 239 Charts and over 1000 Illustrations. It is divided into forty instructions, as follows:

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THE INSTRUCTION ON SALESMANSHIP gives many pointers to the auto salesman in the way of advantages and disadvantages of different systems of ignition, carburetion, engines, etc.

THE INDEX AND THE DIGEST OF TROUBLES—With this Index the reader can find any trouble the auto is heir to, then turn to the Digest of Troubles and learn the cause and remedy, and then turn to the Repair Section and see how to repair it, or turn to the instruction and learn the principle and construction.

VALUE OF THIS INSTRUCTOR TO YOU. It will train you to become:

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> (2) A DIAGNOSIST—who from knowing the principle and construction of all these subjects can instantly tell the cause of any trouble and apply the remedy.
> (3) A RUNNING GEAR EXPERT capable of diagnosing and remedying such troubles as differential, transmission, axles, brakes, steering wheels and axle troubles.
> (4) AN AUTO MECHANICIAN who can adjust and remedy all the troubles after diagnosing—the subject of repairing in this Instructor is complete in every respect.

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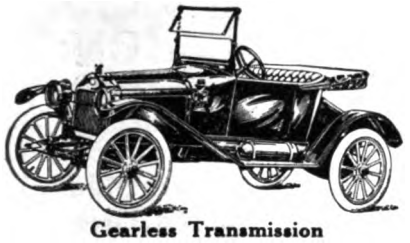
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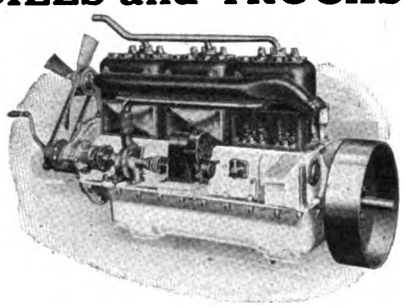
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Manufactured since 1901 for high grade

AUTOMOBILES and TRUCKS

3¾ x 5¼ four and six cylinder, 4¼ x 5¼ four cylinder, Standard or Unit, and 4 x 4 and 4¼ x 5½ Standard types, all L head—4 cycle.

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All Brake Linings Work for a While But the Question Is Which Brake Lining Works Longest and Is Safest

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GARCO products have gained the widest reputation wholly through their merit and the dealer who is wise sells his customer the "stuff" that lasts.

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The Dewey with its steel shell and improved construction, continues in the lead and gives most for the money. It pumps chemically pure air only; drawn from outside the pump barrel and not through the motor.

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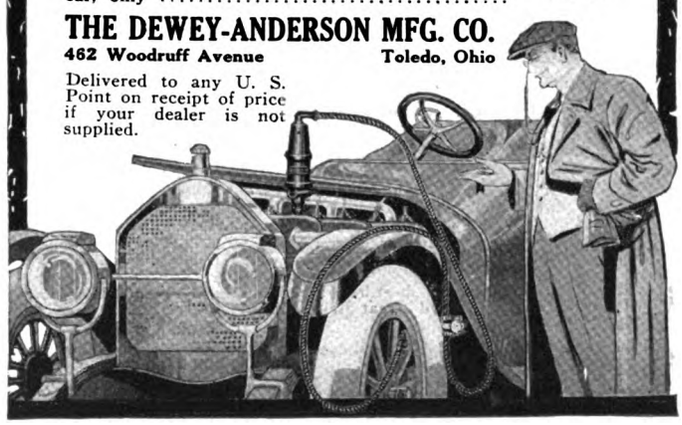
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"32" Touring Car or Roadster with Westinghouse two-unit electric generator and starter; electric lights; over-size tires, 33 x 4 inches; demountable rims, extra tire carrier at rear..... 1,200
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Send for Pleasure or Commercial Catalogue

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SAVE MONEY ON YOUR AUTOMOBILE SUPPLIES
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Each guaranteed for a year. Regularly sold for $1 each.

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Act quickly on these—they are going fast—for the value is remarkable.

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120,000 cars this year. Owners lists, for state, city or county, or special lists of any make electric, gas car or truck at lowest prices. Prompt and reliable service.
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AUTOS ½ Price
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We are giving the public the benefit of these wonderful purchases.
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Send two of them to us at once and we guarantee you 2000 miles by our reclaim system. Our method is to take two old casings, and by a simple process turn them into one sound one, thereby guaranteeing the owner 2000 miles.
This is a snappy proposition.
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or straight side tires, either firsts or seconds, cheaper than any one in the United States.
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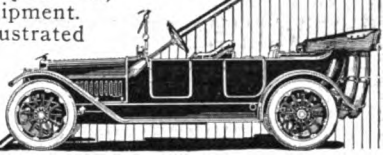
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60 "Six" $3150
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Extra liberal wheel base, big wheels and tires, roomy tonneaus with luxurious upholstering — deep-pitched seats — powerful, flexible motor—full equipment. Write for beautifully illustrated catalog.



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Save Tires—Saves Repair Bills

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Cellular—Honeycomb—Spiral Tube Cooling Systems for Pleasure Cars — Trucks — Tractors

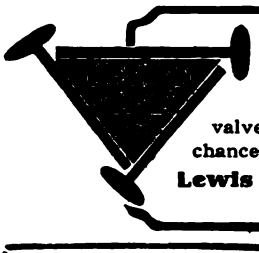
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We make valves exclusively—special heat-treated valves that "stand up" in service. Don't take chances. For anything in valves, write

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HAYES MANUFACTURING COMPANY

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TOP MAKERS don't overlook the "Sharrer One Hand Top" agency

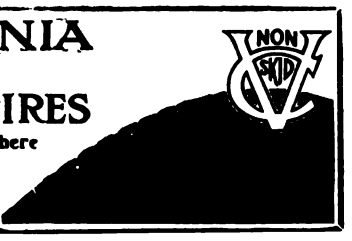
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Oilproof VACUUM CUP TIRES

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Hess Axles Make a Good Car
Enough Said

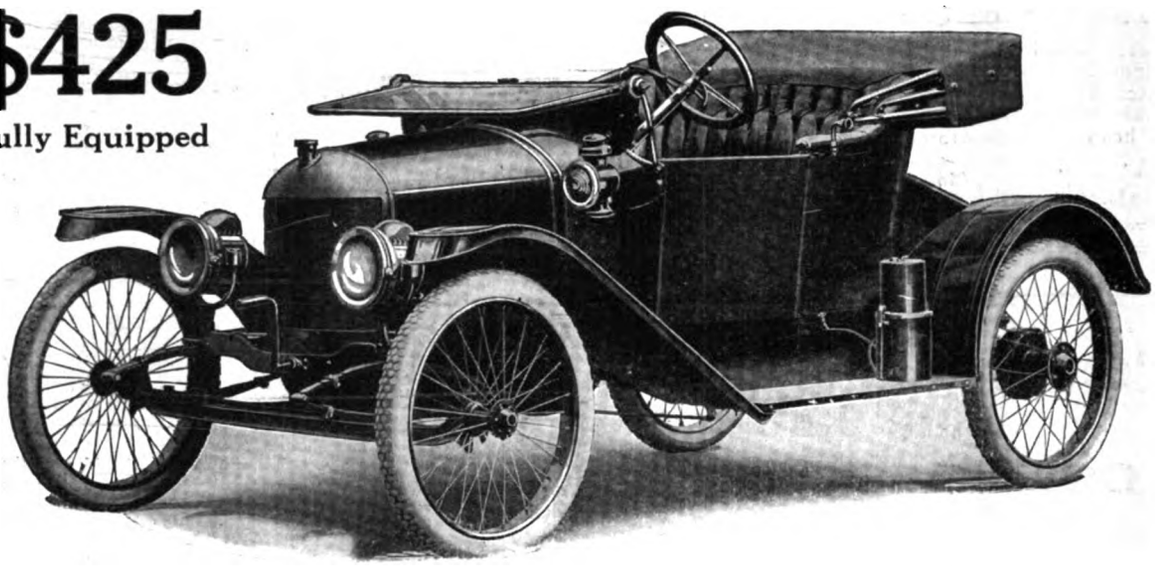
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Old Price of $495 Reduced

$425
Fully Equipped



The New Price Explained

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We have manufactured and shipped thousands of Grant Cars to every section of the United States and Canada. Grant representation exists in every country in the world.

With our unexcelled factory and thorough, rigid, economical manufacturing methods, we have arrived at a production cost whereby we can sell the **Grant Car at $425,** and still maintain the high standard of quality and equipment.

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The First High Grade, Low Priced Car

The Grant at $495 was the first high grade, low priced car, and the best value ever offered for the money.

At $425 the Biggest Value

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Compare it with any low priced car. Its competitor does not exist.

One look will convince you. Its power, its speed, its beautiful lines, its perfect spring suspension, its roominess, its general quick appeal to your taste, will eliminate from consideration the other fellow's machine.

Equipped with the famous Allis-Chalmers lighting and starting system, including electric horn, the retail price is only....$505

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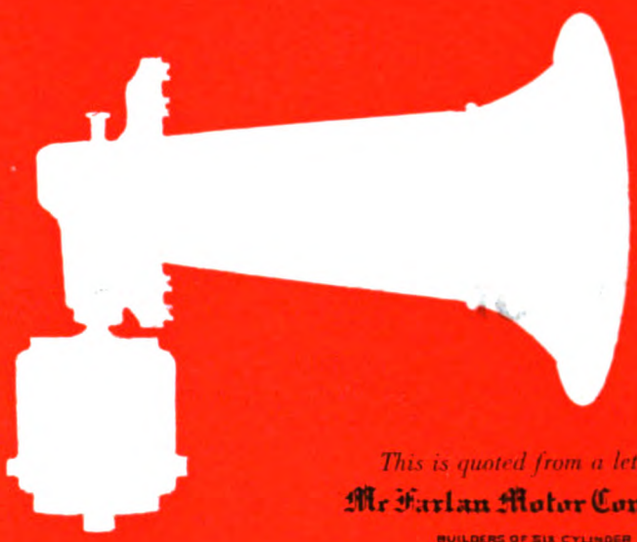
- 4 Cylinder Motor.
- 21 Horse Power.
- Swiss Magneto.
- Sliding Gear Transmission.
- Cone Clutch.
- Bull Nosed Radiator.
- ¾ Floating Rear Axle.
- Wire Wheels.
- Full Fenders and Aprons.
- 30 miles to gallon.

We have some territory left, not a great deal. If you want to "get in" address Dept. D.

GRANT MOTOR COMPANY

FINDLAY, OHIO

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This is quoted from a letter by

McFarlan Motor Company

BUILDERS OF SIX CYLINDER AUTOMOBILES EXCLUSIVELY

Connersville, Indiana

"For years every car owned within this organization has been Klaxon equipped and we know from experience that not only is it entirely adequate as a warning signal, but also it seems to be trouble-proof from a mechanical standpoint.

"This season we are ransacking the accessory field for the absolute best for the McFarlan equipment and can say with all sincerity that no other warning signal was even considered."

LOVELL-McCONNELL MFG·COMPANY

Makers of the "KLAXON"· Newark, N·J·

This advertisement planned, written and set up entirely in the Klaxon Factory. Type composition by the Klaxon Press with "Klaxon" type especially designed by Goudy.

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Lippard-Stewart Trucks are now running in nearly every section of the country in over 70 lines of trade

Lippard-Stewart MOTOR TRUCKS

Radiator at Dash

The Sign of the Lippard-Stewart *At Dealer's*

For Work on the Mexican Border

A STRONG truck was required for severe field and road work where roads are bad, where even the water is hard on radiator and cooling system, and where alkali dust works hardships on ordinary exposed power plants and chain drives. After careful consideration of several different trucks of 1½ Ton capacity these three orders were given for the Lippard-Stewart.

Read these Reasons for Our Specifications which the Government has Approved by this Purchase

Continental Motor

35 H.P. (2 and 1½ Ton); 30 H.P. (1 Ton, ¾ Ton). Selected for great durability and "get there" power. The long stroke motor for trucks.

Automatic Speed Governor

An absolute protection against foolish waste of power and ignorant driving.

Eisemann Magneto

Gives very hot spark on low or starting speeds as well as on high speeds.

Cone Clutch

For simplicity and great dependability.

Brown-Lipe Transmission, Timken Axles and Bearings, both of recognized QUALITY and standard excellence.

Worm Drive (David Brown)

(Standard on 1 Ton, 1½ Ton, 2 Ton. On ¾ Ton extra above bevel drive.) Gives steady, even drive with minimum loss of power. More dependable and durable than chain or bevel-spur gears. The kind that gained fame on the London omnibuses after other drives had failed.

Wheel Bases that suit the load. **Big Size Tire** Equipment. **Left Steering — Center Control.**

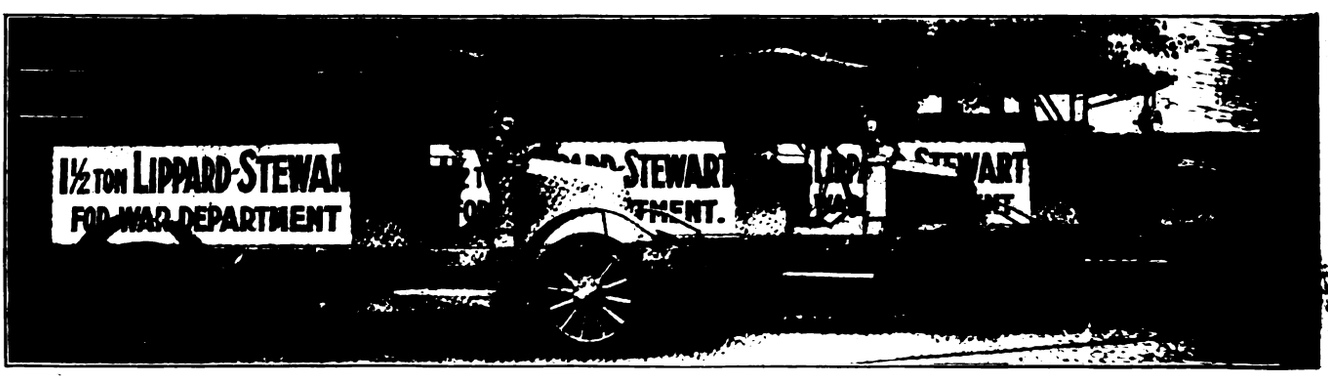
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¾ TON	1 TON	1½ TON	2 TON
that gives rapid service and long-run satisfaction in light delivery work.	with 8 to 9½ feet loading space, power that never fails, durability unsurpassed.	that fills the gap between light and heavy duty trucks with great economy.	A big seller in wholesale and contracting trades. The big truck that produces big results.
$1650	**$2000**	**$2300**	**$2600**

Merchants and Business Men Should Write for Catalogue and Special Information on Truck Service

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Distributors and Service Stations in Leading Sections of the Country



Purchased in June, 1914, by the War Department for Army Escort Duty on the Mexican Border.

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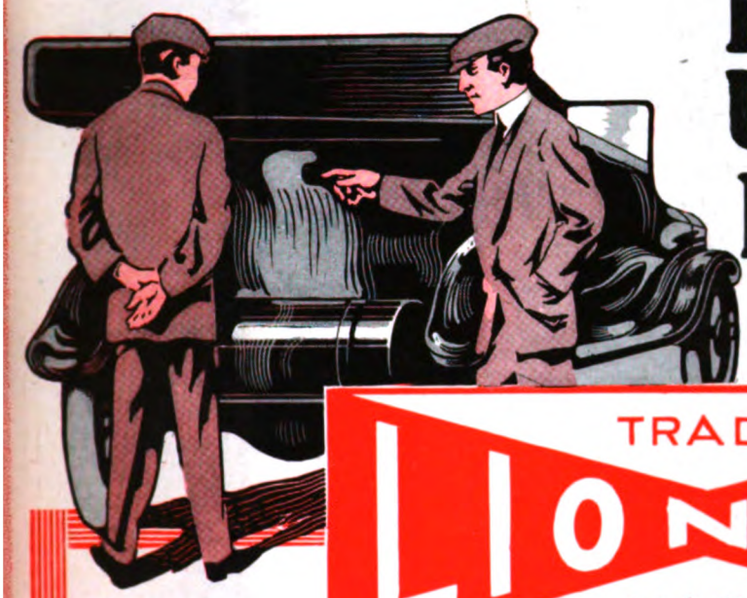
MOTOR WORLD

A Trade Paper Giving the World's Motor News

Volume XL
No. 8

New York, August 19, 1914

Ten cents a copy
Two dollars a year



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TRADE LIONOIL MARK

The Perfect Rust Preventative

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This means that rust can't form underneath the finish causing it to blister and crack—a feature that makes a strong appeal to both dealers and car buyers.

It is one that can be added to *your* car without increasing your present finishing cost. Let us tell you how.

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World's Largest Varnish Makers

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BERRY BROTHERS' CELEBRATED VARNISHES DETROIT

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To Motor Car Manufacturers

You are **vitally concerned** with the **service quality** of the magnetos, lighting generators, and starting motors with which you equip your cars.

You wish to **know** that they will give you, and your customers, **service**—good, prompt, efficient **service free from trouble and break-down.**

Makers of the best known and highest grade electrical accessories have long recognized that **the first essential is to eliminate bearing troubles** from their machines by using only bearings of utmost precision, finest materials, most perfect workmanship.

Therefore, practically all of these manufacturers have adopted, as their standard,

"NORMA"

BALL BEARINGS

They **know** that the reputation of their apparatus has grown simultaneously with the reputation of "NORMA" Bearings.

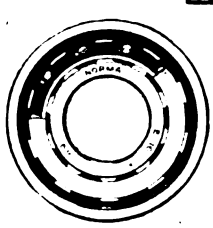
They **know** the value of the sustained high precision and the uniformly high quality of "NORMA" Bearings.

They **know** that the guarantee of "NORMA" stands behind the "NORMA" product.

This means service. This fortifies their guarantees to you and strengthens your guarantee to your customers.

Therefore, "NORMA" Quality represents **a value of vital interest to you,** and is a substantial reason why **you** should adopt, as **your** standard equipment, magnetos, lighting generators and starting motors fitted with "NORMA" Bearings.

We will send you, on request, the names of manufacturers of "NORMA"-equipped electrical accessories.



The Norma Company
Of America

1790 Broadway, New York

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What good are all these skid-preventive devices if your brakes don't hold? And how can you depend on your brakes unless they are lined with Raybestos, the ***only*** brake lining so **dependable that the manufacturers *guarantee* it?**

If Raybestos fails to give actual wear of one full year from the date it is placed on the brakes, we will furnish new lining without charge.

Insist on Raybestos. Look for the name on every foot, and the silver edges.

THE ROYAL EQUIPMENT COMPANY, 1379 BOSTWICK AVENUE BRIDGEPORT, CONN

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Firestone Tire Plant—America's Largest Exclusive Tire Factory

Specialization

One Reason Why You Pay No More for Firestone Tires

Motorists who know would buy Firestone Tires even if they had to pay the highest prices for them. But they don't have to.

Firestones give double value; they not only cost less at last, but they cost no more than average at first.

This sounds too good to be true, but the reasons are simple, and among them the strongest is specialized production.

One class of producers—tire experts.

One line of effort—in manufacture and sales.

No scattering of energies; no complicated overhead expenses. All the brains and capital of the Firestone organization go into the making of wheel equipment only.

Firestone users get the benefit of this condensed efficiency in easy riding, car-protection and all that good motoring means—and they get these benefits at average price.

Above all, first and last, Firestone Tires mean

Most Miles per Dollar

Call on any good dealer for Firestones.

Firestone Tire & Rubber Co., Akron, Ohio—Branches and Dealers Everywhere

"America's Largest Exclusive Tire and Rim Makers"

Pneumatic Tires, Truck Tires, Pleasure Electric Tires, Carriage Tires, Cycle Tires, Fire Apparatus Tires, Rims, Tire Accessories, etc.



Firestone

NON-SKID TIRES

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The fact that he couldn't swim wasn't important to the passenger until he fell overboard. The fact that your Kelly-Springfield Tube floats when you put it in water isn't important to you until you realize that this means that real rubber has gone into that hand-made tube.



Kelly-Springfield Tire Company

Corner Broadway and 57th Street, New York

Branch offices in New York, Chicago, Philadelphia, Boston, St. Louis, Detroit, Cincinnati, San Francisco, Los Angeles, Cleveland, Seattle, Atlanta, Akron, O.

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Bering Tire & Rubber Co., Houston, Texas
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Central Rubber & Supply Co., Indianapolis, Ind.
C. D. Franke & Co., Charleston, S. C.
K. & S. Auto Tire Co., Limited, Toronto, Can.
Todd Rubber Co., New Haven, Conn.
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NEW YORK, U.S.A.

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Handsome 1915 catalogue on request. Please address Dept. 50

The Willys-Overland Company, Toledo, Ohio

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MOTOR WORLD

Vol. XL New York, U. S. A., Wednesday, August 19, 1914 No. 8

REPAIR-SHOP TO BE BARRED IN GARAGES

New Regulations of Drastic Sort Promulgated by New York State Official—No Pits and No Sidewalk Tanks—He Gives His Reasons.

State Fire Marshal Thomas J. Ahearn, of New York, has unearthed a "gasolene peril"; and in unearthing it he has developed a "garage regulation peril" which is faced with awe and real dread by the garagemen of the state.

After figuring out that gasolene properly mixed with air and compressed "is equal to 83⅓ pounds of dynamite" he has promulgated a set of garage regulations which, if enforced, will cost the garages of the Empire State thousands of dollars and perhaps put some of them out of business.

The move has attracted the attention of trade organizations, and the Automobile Dealers' Association of New York has already begun an investigation of this latest official hobby of regulation.

Some of the regulations are particularly drastic. One forbids the maintaining of a repair-shop in a garage. No more pits are to be allowed. Gasolene tanks may not be maintained under sidewalks but must be buried three feet underground elsewhere and proper piping carried to the garage or curb.

Torches, forges, fire, flame or any electrical apparatus capable of emitting a spark are banned. Heating shall be by steam or hot water. No building or part thereof shall be converted into a garage or used as a garage unless it is fireproof.

These are a few of the rules and regulations. There is, of course, provision for the ubiquitous permit and inspection by 1,700 deputies. The regulations go into effect December 1, 1914, and a "reasonable time" will be allowed for the altering of existing structures.

A statement from the marshal's office is, to the minds of the garage trade, as consistent and wise as the marshal's regulations. The statement contains such paragraphs as these:

"The records of the State Fire Marshal's Department reveal the sinister fact that, by reason of the careless handling and the improper storage of gasolene, naphtha and other inflammable and combustible oils, the loss of life and damage to property in the state is greater than from other causes.

"Gasolene is more dangerous to handle than dynamite. . . . It is not necessary that ignition may occur to produce explosion. Records show that under certain atmospheric conditions spontaneous combustion will occur in accumulated vapor."

This paragraph is really eloquent:

"The silent and invisible creeping of this vapor, arising from gasolene and going from place to place for more favorable conditions to strike the blow that means loss of life and property, is a grave and terrible thought."

Since the garagemen have heard of the new regulations they, too, have had not one but several "grave and terrible thoughts."

Schreiber-Boorse Takes On National.

The Schreiber-Boorse Motor Car Co., Milwaukee, Wis., for the past seven years distributer of Locomobile cars, has closed a contract with the National Motor Vehicle Co., Indianapolis, Ind., to handle National cars in Eastern Wisconsin.

Chicago Branch for Houk Wheels.

In order to cope with the increased business in Houk detachable wire wheels in that section, the George W. Houk Co., Buffalo, N. Y., has opened a branch in Chicago at 2339 South Michigan avenue. It is in charge of D. J. Canary.

GO TO MAYOR WITH WAR ON SEPARATOR

New York City Garagemen Urge Him to Sign Repeal of Obnoxious Law—Influences at Work—Hearing too Short for All of the Evidence.

The dealers and garagemen of New York city, although they won out in the New York Board of Aldermen in having the gasolene separator ordinance repealed, have yet to get the approval of Mayor John Purroy Mitchel; they are now waging the battle on this ground and appeared in strong array Friday, noon, August 14, before the mayor. If he vetoes the repeal of the separator ordinance it will have to go back to the Board of Aldermen; strong influences have been brought to bear in opposition to the garagemen.

At last Friday's hearing the garagemen were represented on the floor by Alderman Arnon L. Squiers, who sponsored the measure of repeal; Alderman Joseph Spencer, of the General Welfare Committee; S. P. Mead, president of the Merchants' Association of New York; Charles Thaddeus Terry, attorney for five trade associations; President Pounds of the Borough of Brooklyn, and a representative of the Allied Real Estate Interests, a strong and influential business organization.

The testimony introduced in the brief interval allotted to the garagemen was similar to that which had been gone over on numerous prior occasions. The attitude of the fire department was characterized as oppressive and the insistence of the city upon the installation of an "inefficient, unnecessary and costly" device was condemned.

W. Holden Weeks, deputy fire commissioner, led the opposition and was

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BRIEF REPORT OF GARAGEMEN'S CHEMICAL EXPERT.

First—The separators do not separate. My tests in May proved this conclusively.

A separator large enough to really separate the small amount of oil from the large amount of water would be as large as the garage.

Dr. D. D. Jackson, Consulting Chemist of the Sewer Planning Commission, tested out the separator in my presence and told me that it was "utterly useless and a joke."

Second—A sample of oil taken from the East 42nd street sewer last Sunday (under the same conditions of tide and wind as at the time of the last explosion there) is an oil which separated from illuminating gas but never came from a garage.

The men who were overcome in the 42nd street sewer were affected by some gas other than gasolene. Gasolene vapor causes a "happy intoxication," but all the evidence shows that these men were depressed and not exhilarated.

GAIL MERSEREAU,
Chemical Engineer.

supported by E. P. Goodrich, consulting engineer of the Borough of Manhattan. They contended that a recent sewer explosion at East 42nd street and 1st avenue was due to gasolene fumes in the sewer, but the garagemen were prepared —but didn't have time—to show that the sewer contents contained illuminating gas instead.

The garagemen's chemical expert did not have time to testify in the period allowed by the mayor, but the expert was equipped with samples and results of analyses in support of the garagemen's contention that gasolene does not go into sewers from garages and that even if it did the separators would not separate it.

The installation of these devices has cost from $200 and $300 up to more than $1,000 and the garagemen expressed surprise and characterized it as a last minute move when Engineer Goodrich said such a device could and probably would be put in under city supervision for about $100. "If this can be done," asked the garagemen, "why have we been paying such enormous prices for these devices?" Alderman Spencer characterized the repeal of the separator ordinance as "a measure of sanity."

The mayor closed the session abruptly and invited both sides to submit any further data they desired. Accordingly President R. H. Johnston of the Automobile Dealers' Association, also head of the White branch in New York, wrote a five-page letter setting forth that:

His separator cost $1,075 and never worked; separators do not separate; proposed additional official "inspections" would be irksome; a sewer explosion March 8 in 23rd street, mentioned in the arguments, was caused by illuminating gas which burned several hours; the city's statement that garages of four cars or less are excepted from the separator ruling is inconsistent with the law and is not sensible; official tests of separators by the fire department have been ludicrous; expert's tests show the failure of the separators; many gallons of gasolene are poured into sewers by apartment dwellers who use it to wash gloves, etc.

The mayor's decision is expected in a few days.

Apple Moving to Newark, N. J., Plant.

Following the drawing together of the manufacturing and selling policies of the Splitdorf Electrical Co. and the Apple Electric Co., the latter company is now preparing to remove, lock, stock and barrel, from its present location in Dayton, O., to Newark, N. J. Already five acres of land and buildings, affording a floor space of 70,000 square feet, have been purchased for the purpose. The move will not be immediate, however; the Apple products will continue to be produced in Dayton until the new plant has demonstrated its ability to turn out the work in the required volume and with efficiency. The move will bring together the executive offices of the Splitdorf and Apple companies, Splitdorf headquarters long having been in Newark. It is expected that the Apple products will be produced in quantity in the new plant by October 1, the minimum daily output being 200 lighting and starting outfits.

Proposes Electric Vehicle Day.

An Electric Vehicle Day, staged simultaneously in a large number of American cities, is being considered by the Electric Vehicle Association of America. It was suggested by Robert Montgomery, commercial manager of the Louisville Gas & Electric Co., Louisville, Ky., and such a day may be held in that city this season. The national project, however, may not mature until next summer.

Montgomery's suggestion is that a certain day be set aside, preferably a holiday, and that parades and demonstrations be held everywhere on that date. Prizes for various competitive features would be offered by the central stations and newspaper and poster advertising would center public attention upon the electric vehicle.

European Manufacture at Standstill

Slack Season Anyway and Stocks Depleted—No Activity—War Departments Only Customers.

(Special Cable.)

London, Aug. 17, 1914—The motor car trade in Europe, excepting in vehicles for war purposes, is completely stagnant; it is impossible to state what Continental factories actually are doing work but it is known that very many are closed due to being in the war area or because all labor has been drawn to the army.

The F. N. Works at Liege are closed as are all other works in that area. The makers of pleasure cars are simply doing as little as possible. It is doubtful if any progress will be attempted in connection with next season's models, at least for some time to come. Under ordinary conditions the trade is always slack at this period and no attempt will be made to get supplies until the outlook is clearer.

No component parts can be brought into England from the countries at war but this only affects makers of commercial vehicles which, of course, are in considerable demand. Supplies of most component parts, with the exception of cast steel wheel and magnetos, can, however, be furnished by British firms.

To sum up the situation, the only purchasers of motor cars are the various war departments, which are taking principally heavy vehicles; other makers, therefore, are practically closing down and not troubling about supplies. There is a demand for commercial vehicles only to replace those taken for war purposes and all stocks are depleted.

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ALL TIRE PRICES REACH HIGH LEVEL OF LEADERS

Practically All Lists Are Now Revised Following Crude Rubber Raise—Situation Still Remains Acute.

The tire and rubber situation this week is, if anything, more acute than it was last week.

Last week the principal tire companies, with a few exceptions, had advanced prices from 12½ to 20 per cent. Some of the smaller companies had not announced changes.

This week practically all have reached the higher level, but none have advanced beyond the first increases.

The crude rubber situation, according to F. R. Henderson, of the rubber importing company Henderson & Korn, is practically unchanged. The high price of $1.10 for plantation and $1.12 for Para still holds without an advance and there is no more rubber in America now than there was a week ago. Neither is it likely that there will be any more for some time.

Press cables from Europe during the past week have indicated that shipping might be resumed within a short time. Without being pessimistic Henderson stated that the "short time" might be months. Private cables from London to the company state that the "resumption of shipping at first opportunity may mean many months."

Ajax-Grieb, Kelly-Springfield and Michelin, which did not raise last week, are still holding to their old prices. As officers of the two former stated, they will not raise until the manufacturing cost actually increases.

Empire, Federal, Firestone, Fisk, Goodrich, Diamond, Goodyear, Pennsylvania, Republic and United States advanced last week 12½ and 20 per cent. Later advances are: Lee, 12½ percent; McGraw, 15; Racine, 15; and of the importers, Engleberg, 10 per cent. Gaulois is awaiting advices from the factory in France before it alters prices.

A comparison of the new and old prices in a 34 x 4 size of those which have followed the raise is: Lee Regulars—Plain, $25.85, $29.10; non-skid, $33.10, $37.25. Lee Puncture-Proofs—Plain, $38.25, $43.05; non-skid, $47, $52.90. Lee red tubes, $5.75, $6.45.

McGraw—Plain, $24.35, $28; non-skid, $26.05, $29.95; red tubes, $5.45, $6.25; gray tubes, $4.90, $5.65.

Racine—Plain, $26.80, $30.80; non-skid, $33.50, $38.50; red tubes, $6, $7.20; gray tubes, $5.40, $6.50.

The 12½ per cent advance in Pennsylvania does not include tubes or Vacuum Cup tires which, the company having a good stock, were increased but 5 per cent. The red 34 x 4 tube went from $7 to $7.35 and the gray from $5.30 to $5.95. The Vacuum Cup in the same size was increased from $41.95 to $44.05. Smooth treads were increased from $28.30 to $31.85.

The Engleberg increase was thus: Plain, $32.20, $35.50; rubber non-skid, $36.80, $40.50; steel-studded, $41, $45. Tubes are unchanged.

Packard Securing Patents on Details.

The Packard Motor Car Co., Detroit, is strengthening its patent position by taking out divisional patents on the Cowles motor vehicle patent, No. 1,050,810, which was applied for by Edward P. Cowles, the designer of the first car invented by J. W. Packard; the application, which was filed September 6, 1901, was purchased by the Packard company. The date of the patent is January 21, 1913.

The latest of the divisional patents to issue is 1,107,042, August 11, 1914, relating to truss rod, torsion tube and trunnion spring construction. Another divisional grant is 1,103,567, July 14, 1914, relating to the running gear and steering mechanism. These, and others which will be taken out, are based upon the main Cowles patent and relate to such features as rear axle construction, interchangeable wheels, springs, frames, body designs, steering connections, rear signal devices, motor mounting, and shock absorbers.

Gasolene War An Aid To Charity.

Five charities in Kansas City, Mo., are to benefit by the latest move in the gasolene war in that city; the Standard Oil Co., which is said to be fighting the independent interests, has offered to give one-half cent to charity for every gallon of gasolene sold at its stations in August. The amount will be between $2,000 and $3,000. The latest reduction brought the price from 10.8 cents to 10.3. The charity plan will not be extended to other cities.

Change In St. Louis Marmon Dealer.

Edwin More, president of the More-Jones Brass & Metal Co., of St. Louis, Mo., has purchased the assets of the Missouri Motor Car Co., distributer of the Marmon car, and will continue to conduct the business in his name until the latter part of September, when a new company will be organized.

HOLD TRUCK CONVENTION IN DETROIT IN OCTOBER

Promoted by Motor Truck Club of America—Dealer, Maker and Owner To Be Considered at Four-Day Session.

Arrangements have now been completed for the holding of a National Motor Truck Convention in Detroit during October 7, 8, 9 and 10. The Motor Truck Club of America stands sponsor for the gathering which has been called for the specific purpose of bringing into closer relationship the manufacturer, the dealer and the owner, and to enable joint discussion of the problems with which these three units of the motor truck industry are concerned. The four days will be devoted to papers and discussions of the broad topics of merchandising, installation, operation and maintenance of commercial vehicles.

The convention is to be held in the assembly hall of the Cadillac hotel and in view of the enthusiasm with which those makers, dealers and owners who have been approached on the subject have greeted the plan it is expected that there will be a large attendance. The Detroit Bureau of Commerce has entered whole-heartedly into the spirit of the convention and is doing all in its power to secure the success of the movement. This body will have direct local charge of the convention. Secretary J. Lee Barrett of the Bureau has been appointed Detroit representative of the national body and at a meeting of the leading Detroit interests last week the following committee chairmen were appointed:

C. R. Norton, Packard Motor Car Co., General Committee.

M. L. Pulcher, Federal Motor Truck Co., Finance Committee.

John H. Thompson, Thompson Auto Co., Dealers' Committee.

W. D. Anderson, Anderson Electric Car Co., Electric Committee.

R. B. Spencer, Denby Motor Truck Co., Publicity Committee.

In addition there will be committees on transportation, receiving, entertainment, gasolene trucks and owners, the chairmen of which have not yet been selected.

The designation of papers and topics for discussion is in the hands of the New York Division of the Motor Truck Club of America. The cooperation of every organization connected with the motor truck industry is being sought, among them being the National Auto-

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mobile Chamber of Commerce, the Electric Vehicle Association of America, the San Francisco Motor Truck Association, the Motor Truck Committee of the Chicago Motor Club, the Motor Truck Club of Los Angeles, the Electric Motor Car Club of Boston and the Society of Automobile Engineers. In view of the fact that at the last meeting of the N. A. C. C. the members went on record as favoring a convention of motor truck interests, it is expected that the 30 or more members who are truck makers will lend their support to the movement.

The convention will be essentially an open-house affair and everyone connected with the motor truck industry will be made welcome. There will be no charge for admission to the meetings, nor will any so-called exhibits be made. The sessions will be devoted entirely to business. Truck owners and dealers are particularly invited to attend.

According to the present schedule the first day will be known as "Manufacturers' Day," the second as "Dealers' Day" and the third and fourth as "Get Together Days."

Receiver for Savage Company.

James J. Larmour has been appointed receiver for the creditors of the Savage Motor Car Co., Detroit, Mich., whose officers are held in the county jail, having been placed under arrest August 10 by government inspectors for using the U. S. mails to defraud.

After a preliminary hearing E. E. Tayloy, Robert W. Fishback and Delbert H. Cummings, the three officials of the company, were about to be set at liberty under $7,500 bail bonds being furnished by each, when new complainants appeared and after hearing them Acting United States Commissioner Elmer W. Voorheis required a further bail bond of $5,000. Attorney C. E. Wilcox, who appeared for creditors, had prepared an involuntary bankruptcy petition and prevented the accused from drawing money from the Federal State Bank.

No further action will be taken by Assistant District Attorney Benedict Lee until the bankruptcy proceedings in the United States Court have been disposed of. It is not yet known where the accused will be tried as warrants have been issued against them in both Cincinnati, O., and Detroit.

Hudson Man Going Around World.

E. C. Morse, sales manager of the Hudson Motor Car Co., Detroit, has sailed for South America on a business trip. He then will go to Asia, Australia, Africa and Europe.

KANSAS DEALER TAKES HIS OWNERS ON A TOUR

Stages 11-Day Tour Into Colorado and Makes Big Display of Whites —Gets Many and Enthusiastic Entries.

A tour which has all the elements of the old familiar sociability run but which is in reality a dealer boosting project is being held this week and next by S. W. Forrester, the White dealer in Manhattan, Kan. The town has only 6,000 inhabitants, but Forrester has found a goodly list of entrants in his tour.

The hundred or more motorists in about 25 cars started from Manhattan Monday morning, August 17, and will reach Denver, Col., today, August 19. After four days of touring in the latter state the "motorcade" will return to Manhattan over the Santa Fe trail, arriving home Thursday, August 27.

Forrester calls it the "Colorado White Tour." He began several weeks ago enlisting interest by a series of form letters, inviting White owners to participate. His letters were strongly and well worded, picturing the delights of Colorado and the joys to be found in the numerous camp-fire stops that will be made.

The pilot of the tour is Dr. Willhoit, of Manhattan, in a White 40 roadster; easy runs and plenty of sight-seeing are the rule of the run. The first day's run, Monday, August 17, was Manhattan, Abelene, Salina, Ellsworth, Russel and Hays, Kan.; 180 miles. Tuesday, August 18—Wakeeny, Oakley, Colby, Burlington and Siebert, Col.; 219 miles. Today, August 19—Limon, Bennett and Denver, Col.; 145 miles.

After touring Colorado four days and driving to Pueblo the return trip will be made via La Junta and Lamar, the night stop being Garden City, Kan., a run of 231 miles. The next day's trip will include Dodge City, Great Bend and Lyons, ending at McPherson. August 27 the party will pass through Herrington and Junction City on the final run of 101 miles home.

Nearly every type of White gasolene car is represented. The first White sold in Kansas was entered by its Manhattan owner and is carrying a load of newspapermen. The vehicle has been running at least six years. To carry baggage and spare tires a White 1,500-pound delivery truck is accompanying the tourists. There is nothing to prevent a tourist stopping at a hotel if he so desires, but the outdoor life has been made a feature of the run and roadside equipment is provided.

Michigan Curb Pumps to Go?

Basing his contention upon the fact that the Supreme Court of the State of Michigan recently decided that the city had a right to remove from the streets or sidewalks all obstructions, Commissioner of Public Works George H. Fenkell of the City of Detroit has sent a notice to all proprietors of gasolene stands or stations which have curb or sidewalk stands that these must be removed by October 16.

There are more than 100 such stands throughout the city territory and there is no doubt that the matter will be taken up to the courts for a test case within the next few days, according to an official of one of the local companies.

The action of the commission has caused no little comment among those who operate these stations. It is pointed out by them that the same law which apparently requires their removal may be construed to include such homely necessities as electric light poles, police call boxes, fire hydrants, etc.

Tire Dealers' Association For 'Frisco.

San Francisco is to have an association of accessory and tire dealers. As a result of a meeting held last week it was unanimously decided to form such an association under the title Motor Car & Accessories Trade Association. Dealers in Stockton, Oakland and other cities already have started organizations for the purpose of upholding the prices on tires and other rubber goods. District Attorney H. L. Hynes, Almeda county, has given it as his opinion that such organizations do not violate the Cartwright anti-trust law.

Walpole Sale Again Postponed.

The sale of the Walpole Tire & Rubber Co., Walpole, Mass., which was scheduled for August 12, has been postponed; another date for the sale will be fixed at a hearing on August 31. Judge Dodge, in the United States District Court, ordered the postponement on the agreement of all parties concerned as a precautionary measure in view of the existing financial conditions arising out of the war in Europe.

Metz Earns $1,000,000 in 1913.

One million dollars net was earned by the Metz Co., Waltham, Mass., last year, 10,000 cars at a profit of $100 per car having been produced and distributed through dealers.

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PROMINENT MEN IN TRADE WHO ASSUME NEW DUTIES

Resignations and Promotions That Serve to Place Many Workers in New Places—Few of Them Leave the Industry.

L. C. Pickering has been appointed manager of the Grant Distributing Co., Des Moines, Ia.

M. J. Holmes has been appointed sales manager of the Alma Motor Truck Co., Alma, Mich., maker of Republic trucks.

John Dietrick has been placed in charge of the engineering department of the Denby Motor Truck Co., Detroit, Mich.

The Puritan Mfg. Co., Detroit, has appointed W. W. Tackerbury, formerly of the Metal Products Co., assistant general manager.

H. J. Vogler has been appointed a district sales manager by the Maxwell Motor Co., Detroit. He will make his headquarters in Philadelphia.

A. Dixon, for several years sales manager for the McFarlan Motor Co., Connersville, Ind., has resigned to become district manager for the Krit Motor Car Co.; his headquarters will be in Omaha, Neb.

Harry Patterson has been appointed inspector for the Inter-State Motor Co., Muncie, Ind. For some years past he has been a member of the technical department of the Twyman Motor Car Co., Columbus, O.

J. Groves Cohen has joined the sales force of Nordyke & Marmon Co., Indianapolis, Ind., and will travel in Southern territory. He previously was connected with the United States Motor and Locomobile companies.

Oliver Light has been appointed general manager of the Detroit office of the Joseph Dixon Crucible Co., Jersey City, N. J.; he will have charge of the company's interests in the states of Michigan, Indiana and Ohio.

W. D. Myers, for the past three years sales manager for the Stutz Motor Car Co., Indianapolis, Ind., has resigned that postion. His future plans have not been announced, though it is probable that he will enter the retail field.

Frank J. Girard, for many years Columbus (O.) branch manager for the Peerless Motor Car Co., Cleveland, O., has been appointed district manager, with headquarters in Columbus. R. L. Gardner, heretofore connected with the factory, will have charge of the service department of the company.

C. W. Howard, formerly a member of the traveling staff, has been made assistant sales manager of the Hupp Motor Car Co., Detroit, Mich., and W. C. Howard has been promoted to the post of assistant advertising manager.

The Thos. B. Jeffery Co., Kenosha, Wis., manufacturers of the Jeffery car, has appointed as its Detroit representative Herbert J. Flint, formerly manager of the Hupmobile Sales Co. and later with the Oldsmobile Agency, of Detroit.

H. W. Brown, formerly district representative for the Lozier Motor Co., Detroit, Mich., and for the past three years sales manager for Don Lee, San Francisco, Cal., has become affiliated with the Frank Roueche Co., Salt Lake City, Utah.

Harold T. Birnie, a former member of the Packard Motor Car Co., Detroit, Mich., has joined the sales staff of the Simplex Automobile Co. of New York, succeeding Frank H. Bowen, who resigned to become manager of the S. G. V. branch in New York.

ILLINOIS GARAGEMEN TO FORM NATIONAL ASSOCIATION.

The call for the organization of a National Garage Owners' Association is to be issued by the Garage Owners' Association of Illinois. The meeting will be held in Chicago, probably during the week of the Automobile Show in January.

The Illinois association's board of directors has ordered that the call be sent out and it is expected that about ten states will be represented. Robert Bland, president of the Illinois association, is active in the movement.

The Illinois men are prepared to present the advantages which accrue to garagemen and their patrons throughout the country if the organization can be perfected, and they have hopes that the Chicago meeting will be productive of good results.

Briggs-Detroiter Not to Reorganize.

Rumors that the Briggs-Detroiter Co., Detroit, Mich., is about to be reorganized are vigorously denied by President Briggs. "I would be very much pleased to find out who is sending out this false rumor," he says, "as there is absolutely no truth in the matter. No changes in our organization have been contemplated except that we are starting to greatly increase our selling force."

YEAR'S EXPORTS OF CARS BIGGEST IN CAR HISTORY

Total Outward Shipments Exceed $40,000,000 in Value—Increase of Nearly Million Over 1913 —Imports Decrease.

The fiscal year ending with June 30 was the largest motor car export year on record. The total shipments, including those to Alaska, Hawaii and Porto Rico, were valued at $40,136,565. In 1913, which was the high year up to the present, the exports were valued at $39,325,000. The gain of 1914 amounts to $911,565, or 2 1/3 per cent.

The year's total included 30,136 complete cars, valued at $27,797,642; tires, $4,159,454; motor car engines, $1,391,893, and miscellaneous parts not specified, $6,787,575.

With the sole exception of 1908, every year during the past decade has shown an advance in the value of American motor cars sold to foreign countries. In the fiscal year 1904, according to the bureau of statistics, the value of motor cars exported was $1,895,605; in 1909, $5,387,021, and in 1914, exclusive of parts and shipments to our own non-contiguous territories, $26,574,574, having quintupled in five years and increased thirteenfold in a decade.

Europe bought nearly one-half of our entire sales of motor cars to foreign countries last year, although some shipments thither are for reshipment to other parts of the world. To the United Kingdom the exports amounted to 7,222 cars, valued at $5,853,127; to Germany, 1,435, valued at $1,059,249; to France, 1,429, valued at $224,130, and to other countries of Europe, 3,271, valued at $2,580,428. Canada and Australia also are important markets, the former having taken 4,624 cars, valued at $5,919,776 and the latter, including other British Oceania, 4,244, valued at $3,695,595. To South America as a whole we sold last year 1,985 motor cars, valued at $1,939,212, and to Mexico, 167 cars, valued at $256,675.

The growth in exports of motor cars has been accomplished by a corresponding decline in imports of like articles, the total having fallen from 1,624, valued at $2,905,391, in 1909, to 300 cars, valued at $620,493, in 1914, a new low record for the decade. Of the year's imports, 134 were from France, 40 from the United Kingdom, 55 from Italy and 21 from Germany.

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NEW MCFARLAN MODELS HAVE LONGER WHEELBASE

Cone Clutch and Electric Lighting and Starting Among New Features—Weight Has Been Reduced 300 Pounds.

The line of cars which will be produced by the McFarlan Motor Car Co., Connersville, Ind., for the new season incorporates a number of important changes, although none of them are radical in extent.

As heretofore, there will be two models, or rather one chassis with two motors; Series T cars have a 4 x 6 motor and Series X have a 4½ x 6 motor. The same bodies are mounted on both chassis. These include a two-passenger roadster, four-, five-, six- and seven-passenger touring, four-passenger coupe and seven-passenger foredoor limousine. Open models on the Series T chassis sell for $2,590 and on the Series X chassis for $2,900.

The most important changes that have been made include a lengthening of the wheelbase by 4 inches, to 132 inches; the adoption of a cone clutch which replaces the multiple-disk member used heretofore; the adoption of Westinghouse electric lighting, starting and ignition, though the McFarlan pneumatic starter is optional; a reduction in the weight of 300 pounds, and the adoption of a Stewart vacuum gasolene feed system, the main tank being at the rear.

Externally the cars will be noticeably different from their predecessors. The longer wheelbase has permitted the adoption of a larger body and this has been set considerably lower than heretofore. The new lines are quite distinctive; the upholstery does not project above the body line at any point and the top line of the sides is continued clear around without a break. A little cowl has been added at the back of the front seat. This serves a practical purpose in furnishing a place for a small locker; also the extra seats fold down under this locker. Tonneaus on the six- and seven-passenger models are 62 inches long over all, the cushions being 22 inches deep and the length from the front of the rear seat to the back of the front seat being 40 inches.

Although 300 pounds in weight has been eliminated this has not been taken out of the chassis; instead the frame work of the bodies is being built nearly two-thirds lighter than before. At the same time the new cone clutch is considerably lighter than the older disk clutch.

Another distinctive feature of the McFarlan cars is the arrangement of the control levers. The steering gear is located at the left and the gear shift lever is placed between the front seat cushions and does not extend above them; the emergency brake lever is quite separate and is placed well forward, although it remains within easy reach.

Besser Bids For Alpena Plant.

The Besser Mfg. Co., a foundry company, Alpena, Mich., bid $5,200 for the plant of the bankrupt Alpena Motor Car Co. and it is probable that the sale will be confirmed by the referee in bankruptcy. Two thousand one hundred dollars worth of outstanding accounts were bid in for $275 by Corbin & Hill, while the bid of $725 which Mason Johnson made at the previous sale for the machinery and tools, was accepted. Thus all told the sale amounted to $6,200, or $1,100 more than was bid at a previous sale which was not ratified.

Root Replaces Ashley in Westcott.

H. G. Root, of Springfield, O., has purchased the stock held by H. L. Ashley, secretary-treasurer and general manager of the Westcott Motor Car Co., Richmond, Ind., and will succeed him September 1. Root has been engaged in the accessory business in Springfield for a number of years.

Don Lee Appointed Paige Distributer.

Don Lee, one of the best-known men in the motor car business on the Pacific Coast, has become the distributer for Paige cars, made by the Paige Motor Car Co., Detroit. Lee, who has branches in Los Angeles, Sacramento, Fresno, Pasadena and Oakland, Cal., is distributer for Cadillac cars.

Dart Company Is Reorganized.

The Dart Co., Waterloo, Ia., has been reorganized as the Dart Motor Truck Co. It has been arranged to sell preferred stock to the amount of the assets of the old company and there is additional paid in capitalization of $85,000.

Royalty Suit Not In Federal Court.

The Court of Appeals in Cuyahoga county, O., and not the United States Circuit Court of Appeals, a higher court, should have been mentioned in Motor World of August 5 in connection with a royalty suit brought by the Unit Coil Co., Jersey City, N. J. The action was for the payment of royalties.

BODY LINES REFINED IN LATEST LYONS-KNIGHTS

Open Cars Now Have Modified Type Streamline Bodies With Increased Room—Equipment Made More Complete.

Practically no mechanical change has been made in the Lyons-Knight cars for 1915, which are produced by the Lyons-Atlas Co., Indianapolis, Ind. The chassis remain the same, the five-passenger touring model listing at $2,900, the seven passenger at $2,980, the sedan at $3,900 and the seven-passenger limousine at $4,300. Despite this fact, however, the equipment list has been lengthened and includes a Golde one-man top, with the option of Jiffy or Collins curtains, Warner speedometer, combination adjustable tire holder and trunk rack, two extra demountable rims and a Manzel power tire pump.

The principal change that has been made is revealed by the body lines of the cars. In the case of the open cars, bodies are of a modified streamline type with the upholstery carried along the tops of the doors, thus giving a straight line effect. From front to rear the sides are unusually high and both front and rear seats are rather wider than usual, the latter measuring 52 inches. All instruments, such as speedometer, clock, gasolene gauge, oil pressure gauge, ignition and lighting switch, etc., now are mounted flush with the instrument board.

The Knight motor, with which the car is equipped, has a bore and stroke of 4½ x 5½, and although the S. A. E. rating is but 33.4 horsepower a maximum of 76 horsepower has been developed at 2,000 r. p. m. Power is transmitted through the intermediary of a three-plate clutch and a three-speed selective gearset. The underhung worm gear, which always has been a characteristic of the Lyons-Knight, is retained without change, as is the floating type axle. As heretofore the rear of the chassis is supported on three-quarter elliptic springs measuring 54 x 2½ inches; front springs are semi-elliptic.

Remy Ignition On Studebaker Cars.

In the description of the Studebaker cars which appeared in the August 5 issue of Motor World it was stated that the lighting, starting and ignition system is of Wagner-Studebaker construction. Ignition, however, is cared for by a Remy distributer.

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Businesslike Announcements

Announcing the new model which has reached your salesroom is an art. It is one of the many arts in motor car salesmanship. Too small a percentage of dealers capitalize on it to the extent which is possible. They wait until the demonstrator has arrived, until they have it in their showrooms and then work on or jump at plans of making its arrival known.

Precipitate action is rarely successful in salesmanship, except in fire sales. The good merchandiser begins his selling campaign well in advance of the arrival of his goods. He gets the news of their coming to his possible buyers weeks in advance. He begins building up sentiment among his buyers. When his goods arrive his plans go further; he has his trade announcements, his letters to special customers and his newspaper advertisements. All are combined in a carefully worked out campaign.

Signs Are But a Part

It is not enough today to cover the entire front of your sales building with fire-sale posters announcing that your new models have arrived. These are good warning to your business rivals, but reach but a very small percentage of your prospects.

The announcement card is a good merchandising feature, particularly if it tells something. Generally it should be followed by a well-prepared catalog or digest of the new models, their prices, improvements and attractive features. The vague announcement card which states merely that "the new 1915 Sullivans have arrived, and may be seen at the salesrooms at 127 Zephyr avenue," is not enough; it breaks the ice but more follow-up ideas are needed.

One successful dealer in an Ohio city has a regular program for the announcement of new models. A week or two before the models arrive he circularizes all of his old customers, giving a few general facts on the new models and when they will arrive.

This letter serves more or less as a bomb in the camp of his more fortunate rival who already has his demonstrator. As soon as the demonstrator arrives he sends out his announcement cards to one division of his present owners and prospects, whereas to others he sends a special letter.

Work Out Suitable Plan

These are supplemented by press announcements. He carries signs on his windows and the usual sign on his demonstrator. As soon as the demonstrator arrives he has his preliminary catalogs that are mailed out. This concentration of announcement covers a period of one week and paves the way for the selling campaign of the salesman.

Let each dealer work out some plan of announcing the new models. Your plan should be proportioned to your territory and the present status of the car you sell. Make your announcement a business one. Let every phase of it tend to impress on your customers and your prospects that your business is an up-to-date one, conducted on systematic and sound business lines. It should not be a fickle announcement; it should not be a frivolous one but in keeping with the business movements of the days.

A broad campaign on announcing your new models does not necessarily mean a big investment. Engraved announcements may serve for a high-priced car in a large city but a plain business card will do in the average city.

Irrational Deposits

Each week brings letters to our office from many dealers asking concerning the financial standing of certain companies with which they have posted deposits for cars, or for the privilege of selling a car in a certain territory. Too many dealers are too rash in this posting of deposits. It is quite evident that it is not always their own money that goes up so promptly but rather that of the backer who has been coming to the rescue.

Instead of posting deposits with concerns you are not familiar with, and often with new organizations, it is better policy to spend one-quarter or one-half of it by visiting the factory and sizing up the situation personally.

Too many dealers, hearing of a new car, are willing to wire deposits in order to get territory. This is dangerous. It is not good business. Investigate, even if it causes a delay of a week or so. Caution of this nature may save you the amount of your deposit and also a law suit and other business experiences of an unpleasant nature.

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Hupmobile Entirely Revamped, $1200

New Streamline Body, Larger Motor, Left Drive, Longer Wheelbase New Features—Rear Springs Semi-Elliptic.



THE NEW HUPMOBILE BODY IS ENTIRELY DIFFERENT FROM PREVIOUS ONES

A new and entirely redesigned car has been brought out under the designation Model K by the Hupp Motor Car Co., Detroit, Mich., for the season of 1915. Scarcely a feature in the construction has escaped change, and the result is a car that is considerably bigger and more powerful than its predecessor. The price remains $1,200.

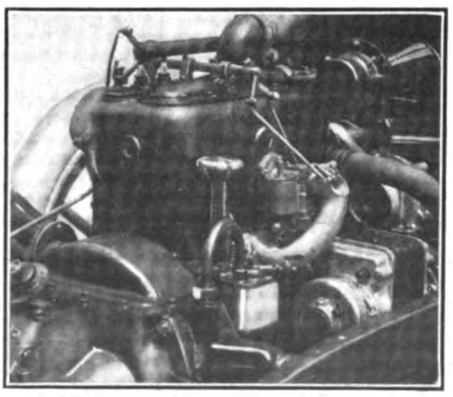
The body is of a totally different type and some of the changes that have been made are quite radical. Left drive and center control have been adopted, the wheelbase has been increased from 106 to 119 inches, semi-elliptic underslung rear springs replace the transverse springs, and the rear axle is new throughout.

Included in the equipment list are all the things ordinarily required for the car—top with cover and side curtains, windshield, headlight dimmers, speedometer, license bracket, robe and foot rails, cocoa mat, tire carrier, an extra demountable rim, pump, jack and full set of tools. The price is $1,200 with either touring or roadster body.

The L-head motor has had its bore increased by ⅛ inch, dimensions now being 3⅜ x 5½, and the S. A. E. rating 18.25. The cylinders are block cast as in the past. The water jackets are larger, the valve diameters have been increased, the connecting rods are longer, all the bearings are larger, the ports and passages are of greater area, and the intake manifold is of new and improved design.

The air supply to the carburetter is preheated; the carburetter still is a Zenith but is of the horizontal type instead of the former vertical, and last year's one-inch size has given way to the 1¼ size. The increased bore, the larger valves, ports and passages, and the new carburetter system are all factors tending to increase the power, while the larger bearings give the requisite increase in wearing area and the longer connecting rods make for smoother running.

The former practice of offsetting the cylinders ⅝ inch is adhered to. Pistons



THE BORE, WHICH WAS 3¼, NOW IS 3⅜ INCHES; THE STROKE REMAINS 5½ INCHES

have three rings each, diagonally split. The piston pins are clamped in the connecting rods and take their bearings in the piston bosses. The crankshaft runs in three bearings, 1 9/16 inches in diameter, the bushings being split and lined with babbitt. The bushings can be reached for adjustment by removing the pan in the bottom of the crankcase; the crankcase is of a modified barrel type.

Drive to the camshaft is by Coventry silent chain, which can be adjusted for tension without removing the chain cover. The valves are one-piece forgings of a special steel that will retain its hardness at a red heat. Lubricating oil is still circulated by the flywheel, the rim of which runs close to the bottom of the pan, picks up the lubricant and throws it by centrifugal force into a tube from which it is carried to the various working parts. The face of the new flywheel is much wider than that of the old one, the result being that a larger quantity of oil is thrown into the system. The oil leads to the cylinders have been eliminated, as it was found that the oil thrown from the cranks was ample for the lubrication of the cylinder walls.

The electrical equipment of the car is entirely new. Westinghouse starting and lighting is used as formerly, but instead of using a separate motor and generator, a single unit—motor-generator—is used. Instead of magneto ignition the Atwater-Kent system is employed, the distributor being driven by a vertical shaft; an automatic advance is part of the system. The new electrical system has resulted in considerably simplifying the power plant. A new fitting is a fan bracket which automatically maintains a constant tension on the fan belt by means of a coil spring.

The gearbox is no longer cast as a unit with the crankcase but is a separate casting bolted on, the unit power plant idea being retained. The lubrication of the gears is not effected by the engine lubricating system as in the previous model; a separate oil filler is provided and is directly under the floorboards where it is easily accessible. This makes it possible to use a heavier grade of oil for lubrication of the gearset.

The clutch is similar to last year's clutch, but has been turned completely around, so that the thrust is taken by the gear box rather than by the motor. The diameter is still 12 inches, but there are now 13 plates, four more than last year. Just back of the clutch a new cross member has been inserted in the frame which carries the shaft for the clutch and brake pedals. Two universals are used in the propeller shaft instead of

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one, and the shaft itself is tubular instead of solid, and lubricant runs through it from the forward universal to the one in the rear. Drive and torque are taken by the springs, there being no radius rods or torque members.

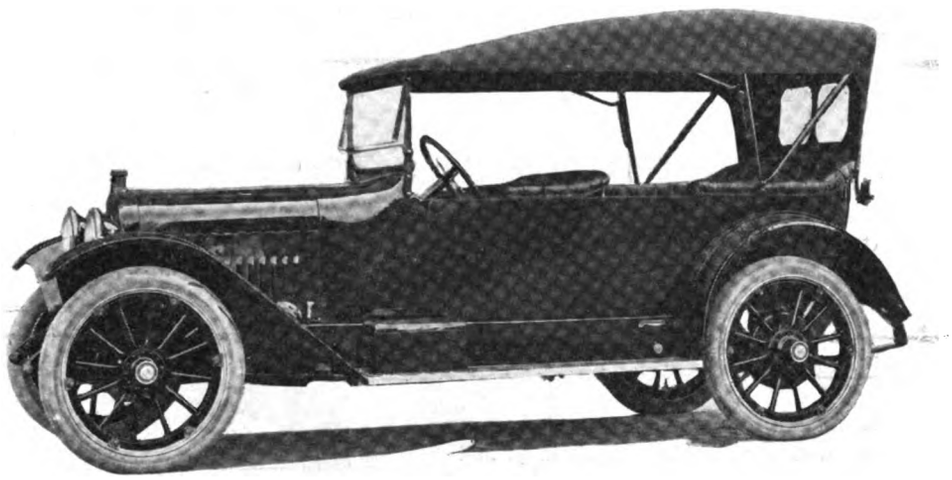
In redesigning the rear axle, the differential has been made much more accessible. In former models it was necessary in order to reach the differential to remove the bolts from the vertically split housing and take the whole housing apart. A very large round cover-plate now exposes the entire differential and drive mechanism. The final drive ratio is now 4.25 to 1. Either of the axle shafts may be withdrawn from the housing without jacking up the wheel. The casing is of pressed steel, and the gears and differential are mounted in a malleable iron carrier. The differential runs on annular ball-bearings. The front axle also is entirely new, and the knuckles give a castor effect in steering.

The spring suspension system in its redesigned form includes front springs 37 x 1¾ and semi-elliptic rear springs 52 x 2; the front springs are 3 inches longer than formerly. Grease cups have been placed on all spring connections and in the ends of each leaf there are hollows filled with graphite lubricant; these require refilling but once in a season.

While the steering gear is the same as in the previous model, the wheel is 18 inches in diameter instead of 17. The wheels are larger than they were last year; the tires are 34 x 4 instead of 33 x 4. The tire carriers are in the rear on the touring car, but on the roadster they are carried under the rear deck of the car.

Various little details increasing the comfort of the operator or the car have been made a subject of study. An example of this is in the pedals, which are now adjustable and which are provided with exceptionally large foot pads. There is now also a side support for the foot in operating the accelerator pedal.

It is in the body work that the changes appear most radical to the eye. Instead of the straightline bodies of the 1914 season the Hupp bodies are now a full streamline construction. The sloping hood and cowl form a continuous curve which is swept to the rear end of the car. A new radiator makes a more fitting entrance of the streamline form and at the same time gives a gain in capacity of 2.5 gallons by the use of hexagonal in place of square cells.



LEFT DRIVE WITH CENTER CONTROL IS A FEATURE OF THE NEW HUPMOBILE

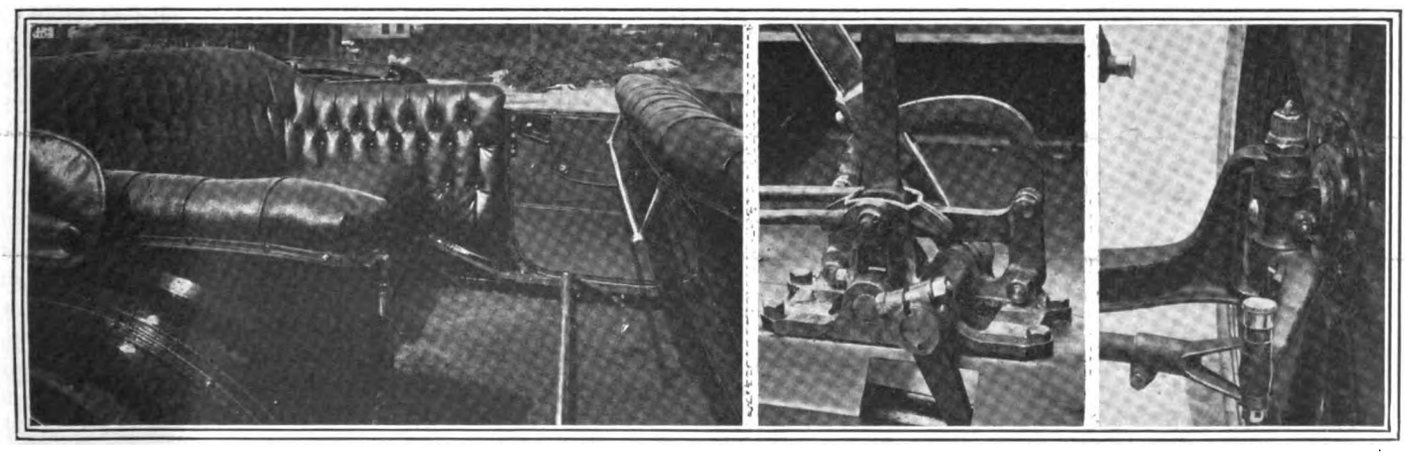
DETAILS OF HUPMOBILE FOR 1915 SEASON.

Price, touring or roadster	$1,200
Color	Black and maroon
Make of motor	Hupmobile
Number of cylinders	Four
Shape	L-head
How cast	Block
Bore	3⅜
Stroke	5½
S. A. E. rating	18.25
Ignition	Atwater-Kent
Carburetter	Zenith
Starting-lighting	Westinghouse
Clutch	Disk
Gearset	3-speed
Wheelbase	119
Wheels	Wood
Tires	34 x 4
Steering	Left
Control	Center

Equipment: Top with cover and side curtains, windshield, headlight dimmers, license brackets, speedometer, robe and foot rails, cocoa mat, extra demountable rim, tire carrier, pump, jack and full set of tools.

Pilling Detroiter Eastern Manager.

F. W. Pilling has been appointed Eastern sales manager of the Briggs-Detroiter Co., Detroit, Mich., to act jointly with Wallace C. Hood, general sales manager. Pilling has been connected with the motor car industry for the last ten years. In 1905 he had charge of production of tools, jigs, dies, etc., at the Cadillac company; later he joined the Ford Motor Co. in a similar capacity; he was at one time superintendent of the Detroit Auto Vehicle Co. and then foreman of the Olds Motor Works experimental department. In 1910 he entered the selling organization of the Maxwell-Briscoe Co. and in 1911 joined the Krit Motor Co. in the capacity of assistant sales manager.



GLIMPSES AT HUPMOBILE CONSTRUCTION—THE REAR SEAT IS WIDE; GEAR SHIFT AND BRAKE LEVER ARE SUBSTANTIALLY MOUNTED; THERE IS AN AMPLE FACTOR OF SAFETY IN THE STEERING KNUCKLES

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Dealer's Legal Status

To Make Sure That Dealer Can Hold Guarantor of an Account the Guarantee Should Be Written Rather Than Personal —"As Is" Means What It Says.

By Geo. F. Kaiser

1. Will a contract made with one party who is not strong financially, and "personally guaranteed faithful performance" by a second party who is strong financially, be equally as binding as though made directly with the second party?

2. Should accounts on my books be carried with the party on the contract or the guarantor?

1. In the absence of an opportunity to examine the contract on which this question arises, and without any other facts than those appearing in the question, we must say that we do not consider a personal guarantee of faithful performance nearly as advantageous to you as having the name of the guaranteeing party affixed to the contract as principal or surety.

2. Accounts on your books should be carried with the party whose name is in the contract, as he is the only principal, the guarantor not being liable to you until a default in carrying out the obligations imposed upon him therein is made.



What do you want to know about the law which has to do with your business?

If there is any point you wish cleared up ask Motor World.

Your question will be answered in full on this page.

Plans Dealer Might Pursue.

The law of suretyship and guaranty is one of the most technical branches ot the already too technical law, and in dealing with persons of somewhat doubtful financial standing, with the idea of ultimately collecting from a person of means, who holds himself out as being willing to stand behind, too much care cannot be taken.

If A, a dealer, desires to sell goods to B, on condition that X will stand good for them, he may make any of the following arrangements:

If agreeable to all concerned, A may sell directly. This is the best possible way for A to secure himself.

Next he may make a contract with B and X as joint principals, each signing the contract as such. This way is also safe and simple.

Then again A may make a contract with B, and have X join in the contract as a surety, with the understanding that the credit of course is being extended to B in consideration of X becoming a surety. In this case as in the others, X is liable for the debt from the beginning.

If it is not possible to make the foregoing arrangements, A may make his contract with B and have X note in writing that he will "Guarantee the Payment" or "Guarantee the Collection" of the account.

It is best in this case to use the words "Payment" or "Collection," as their meaning is well understood in law, while if other words are used, there may be some question as to what was meant.

When payment is guaranteed after A has demanded payment of B and has been refused, he may immediately seek payment of X. Where collection is guaranteed on the other hand, A must first sue B, recover judgment against him, and procure the sheriff's certificate that he could find no property of A's to levy upon before he can seek payment from X. In other words, only when he has exhausted all of his legal remedies can he call upon the guarantor for payment.

It must be borne in mind, however, that practically all of the states of the United States have a so-called "Statute of Frauds," under which all promises for the debt, default or miscarriage of another must be in writing, otherwise they are void. This includes practically all cases of suretyship and guaranty, except to any person who in lending a helping hand becomes a principal.

Get Guarantor to Affix Name.

Returning to the question again, it is seen that if the person financially sound had affixed his name to the contract, he would have been liable for the debt whenever the creditor felt like calling upon him, but where he "personally guaranteed faithful performance," as in the present case, his guarantee was only one of payment or collection, and the creditor must await the default of the debtor in the former case and exhaust all his legal remedies against him in the latter case before he can call upon the guarantor without access to all the facts, when it could not be said whether the guarantee is one of payment or collection.

Garageman May Assign Lien.

It was recently held in Michigan that a garage proprietor may assign his lien to another person on selling his business. A Michigan garageman was sued by a motorist who claimed that his motor car was wrongfully held by the garage man. The garage man contended that he had a lien on the car. It seems the present owner of the garage had only recently bought the business from another man. The former owner had made arrangements with the motorist to the effect that the latter would ship his car to Muskegon, where the former would receive and repair it. This was done, and the garage man paid $33.60 freight charges, and furnished an extra tire for $50.75.

A short time thereafter, accounts were straightened between the garageman and the motorist, the latter paying $75 on account, and agreeing to pay $171.60 for the car. Then the garage man sold the business to the present owner, and assigned his lien and claim for repairs to him. The motorist tried to get his car back without paying his bill, and when he was unsuccessful brought suit, but the court said that he must pay his bill, and held that the lien might be held to include freight charges and the extra tire, and that it was assignable.

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Large Elgin Entry List Betokens Keen Strife at Two-Day Racemeet

Thirty-one Cars to Start in Free-for-All—Said to be Largest List Ever in an American Circuit Road Race—17 Makes of Car.

That the interest in racing is as keen as ever is indicated by the large list of entrants received by the Chicago Automobile Club for the fifth annual Elgin road races which will be run off Friday and Saturday, August 21 and 22.

Thirty-one cars and 57 entries are declared for the two days. For the first day, when the Chicago Automobile Club trophy will be contested for by cars of 450 cubic inches and under, 26 are nominated, while in the free-for-all for the Elgin National trophy on the second day, the full complement of 31 cars is billed to start. All cars are nominated for both days except the Lozier, Chadwick, one of the Whites, one of the Duesenbers and the Rae.

This, it is claimed, will make the largest field of starters ever in an American road race, not counting the race from Los Angeles to Sacramento last summer, when 50 started. That was a straightaway run and not of the circuit course variety.

It is a most representative field, too, made up for the most part of private entries. The Stutz, Mercer and Maxwell are the only factories directly represented. Other cars are backed by private owners, and Chicago is particularly strong in this respect with nominations from Charles E. Erbstein, E. C. Patterson and Frederick Robinson; Frank Fox, Indianapolis, is another of those who back racing cars for the love of the sport and not because of trade inclinations.

The 31 cars represents 17 different makes. Six foreign machines—three Peugeots, two Sunbeams and a Mercedes—are in the lot, while the White is a newcomer so far as Elgin is concerned.

Of the entrants, it is known that the E. J. Schroeder Peugeot will not start. Schroeder was the first to enter, and he was counting on De Palma driving for him. Then De Palma signed with Patterson, after which Schroeder abandoned all idea of coming to Elgin. No work has been done on the car since the Indianapolis race.

The Rae, entered in the free-for-all only, is a 1903 Mercedes rebuilt. It has been modernized by "Mercedes Fritz" Walker, who will drive the car himself. The Tahis is new, built by Frederick Robinson, a theatrical man who formerly was a locomotive engineer and who has introduced in it some of his own ideas. The Burman Special is a late entry for the free-for-all, as is the Keeton in both events.

THE LIST OF 31 ENTRIES FOR ELGIN RACES

Driver.	Car and Entrant.
Not named	Peugeot, E. J. Schroeder
B. Oldfield	Stutz, Stutz Motor Car Co.
G. Anderson	Stutz, Stutz Motor Car Co.
H. Grant	Sunbeam, W. Ziegler, Jr.
G. Morris	Sunbeam, W. Zeigler, Jr.
R. Burman	Peugeot, L. C. Erbes
L. Heinemann	Marmon, C. E. Erbstein
F. H. Dearborn	Stutz, W. Zeigler, Jr.
R. De Palma	Mercedes, E. C. Patterson
E. Rickenbacher,	Duesenberg, F. Duesenberg
W. Chandler,	Braender Bulldog, W. Chandler
Tom Alley	Duesenberg, F. Duesenberg
M. Roberts	Tahis, F. Robinson
S. Wishart,	Mercer, Mercer Automobile Co.
E. Pullen,	Mercer, Mercer Automobile Co.
C. Luttrell	Mercer, Ed. Schillo
H. Wilcox	Gray Fox, Frank Fox
R. Mulford	Peugeot, Peugeot Import Co.
L. Fontaine	Lozier, R. H. Knowles
M. Stringer	Marmon, C. E. Erbstein
W. D'Alene,	Marmon, Moross Amusement Co.
T. Tetzlaff,	Maxwell, Moross Amusement Co.
W. Carlson,	Maxwell, Moross Amusement Co.
Fritz Walker	Rae, Elmer Rae
J. C. Hoskins,	Chadwick, Auto Service Corp.
E. O'Donnell,	Duesenberg, F. E. Duesenberg
W. Tidmarsh,	Great Western, James Forsey
W. J. Shrunk	White, R. A. Bennett
Eli Caillouette	White, R. A. Bennett
Not named	Burman Special
Callaghan	Keeton

The course is the same as for past events, and in each race the distance will be the same—301.65 miles. The prize fund totals $6,000, with $2,000 for first, $700 for second, $300 for third and $200 purses for the fastest lap each day, given by Harry Vissering, president of the Chicago Automobile Club, and Martin J. Kavanaugh, a member.

Official practice started Monday morning with nearly every entrant at the course. The men will be given 2 hours each day. No practice will be allowed Thursday. The races start at 11 o'clock each day.

Overland Plans Output of 75,000.

Seventy-five thousand automobiles will be manufactured by the Willys-Overland Co., Toledo, O., for 1915, the increase over this year's production being 30,000.

It is understood that the company already has contracts closed with responsible dealers for more than 70,000 cars for the 1915 season and that unless European war conditions turn things upside down it will go ahead on the basis of a 75,000 output.

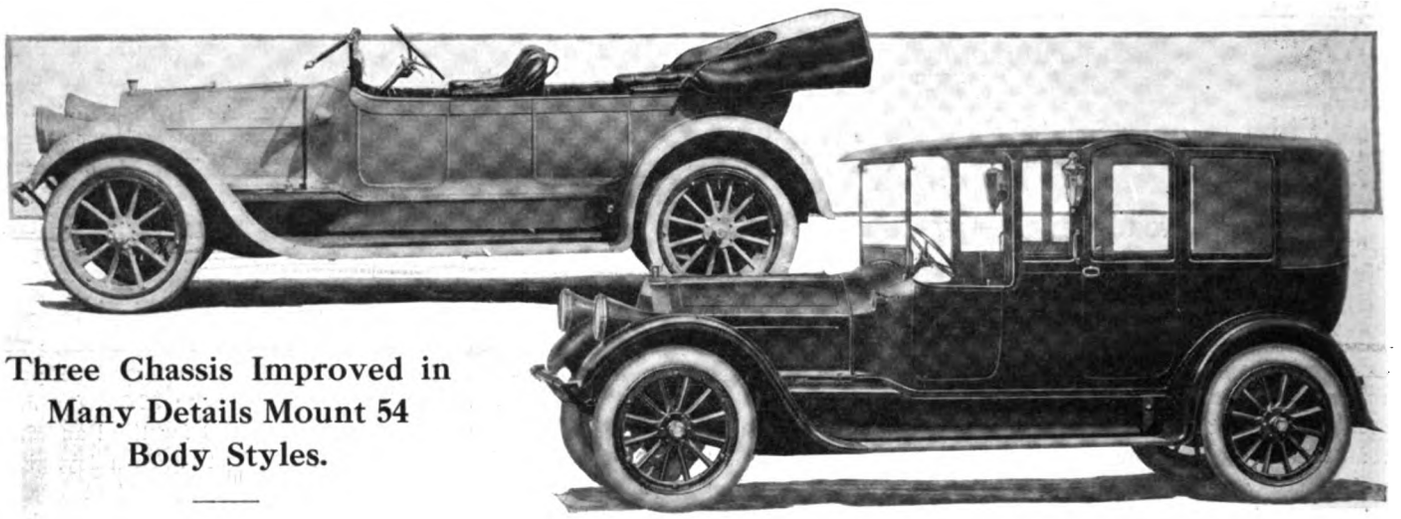
Despite the fact that the common stock earned 30 per cent during the year ending June 30, no extra cash dividend will be declared at this time. The common will be maintained on a regular 6 per cent basis and the balance of the profits, amounting to $4,500,000, will be turned back into the business either as additional working capital or for plant additions.

Monroe Heads New Monroe Company.

R. F. Monroe has been elected president and general manager of the Monroe Motor Co., which was organized last week in Flint, Mich., and which will produce a light car to sell for $450. The other officers elected are W. C. Durant, vice-president; A. G. Bishop, treasurer, and Curtis R. Hathaway, secretary. These men, together with W. C. Rowles, R. F. Armstrong and A. B. C. Hardy, form the board of directors. The first of the cars already has been received by the Chevrolet Motor Co., of New York.

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Lower Frame In New Series Pierce-Arrows



TWO OF NEARLY TWO SCORE DIFFERENT BODY STYLES MOUNTED ON THE THREE PIERCE-ARROW CHASSIS

Three Chassis Improved in Many Details Mount 54 Body Styles.

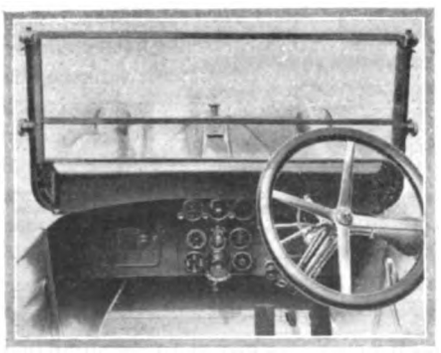
Largest Limousine Reduced $100 Only Change in Price.

One primary change has been made in the Pierce-Arrow series-three cars as compared with the preceding model known as the series-two. This is a drop in the central portion of the frame. With this single change the entire appearance of the new line has been altered, and in connection with its adoption one or two other minor changes have been necessitated. The principal alteration that has come up on account of the dropped frame has been the abandonment of gasolene-gravity feed and the substitution of a pressure feed system with the gasolene tank at the rear of the chassis. The introduction of the pressure feed has in turn caused a change, which is the raising of the carburetter and hence an increase in its accessibility. Prices are unchanged with one exception, the largest limousine having been reduced $100.

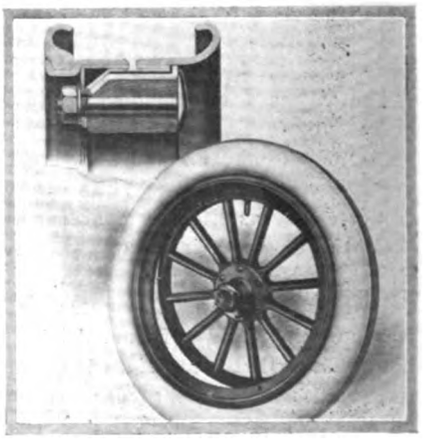
Full equipment is found on the Pierce-Arrow which this year is more luxurious than ever before. Wire wheels may be secured at an extra cost, but the standard cars are fitted with wood wheels having the Johnson patent demountable rims. The extra tires and rims are carried on the running board and this year the Silvertown cord tires will be found as standard equipment. In addition to the actual constructional features of the car, all models will be regularly equipped with hand inspection lamps, and a full instrument board, which includes the clock, speedometer, odometer, oil and gasolene pressure gauges, voltmeter, ignition and light switches and starter button. Magnetic gasolene tank gauges are now fitted on the tanks. In addition there is the power driven air pump for inflating tires, a bulb and electric horn, collision bumper, trunk rack, shock absorbers, a supply of oils and grease, extra valve and spring, storm curtains, and aprons, ventilators, tonneau lamp, and in enclosed cars there is an adjustable foot rest, Waltham clock, umbrella holders and every equipment that makes for luxury known to the modern enclosed car.

On all three of the sixes which compose the Pierce line it has been found possible, on account of the increase in drop of the frame, to lower the bodies and running boards without reducing the road clearance. There is also a number of other minor chassis changes which are designed to increase the convenience and comfort of the driver. The control members, including the accelerator and hand throttle and spark control, have been simplified; the electric starter is operated by a single push button on the dash in place of a pedal and, in place of the plugs heretofore used, a Yale lock and key are provided for the bank of switches. The engine cannot be started if the bonnet is locked and the key removed from the ignition switch. The engine primer has been simplified and the housing of the universal joint between the clutch and the gearbox has now been extended to cover the entire mechanism.

It is in body work that the Pierce company has allowed itself to offer an exceptionally wide choice to the purchaser. There are 54 body types and a practically unlimited number of color schemes to choose from. The Pierce company states that in offering such a wide range of selection it is excelling in variety even the foreign builder who sells his chassis separately. All of these bodies are entirely new in design. The standard brougham, landaulet, suburban and landau bodies have rounded corners, domed roof, and in general lines which have been kept simple but at the same time follow the stream design of this year's styles. In addition to these standard types there are many modifications and combinations of different design.



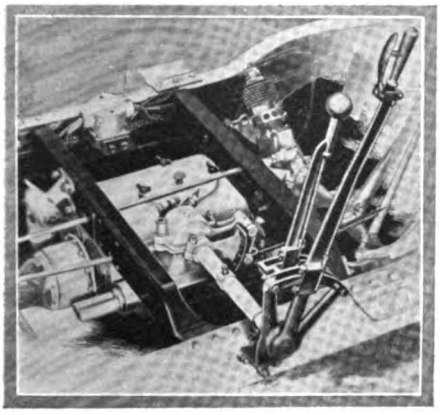
DASH UNITS ARE COMPACTLY ARRANGED IN NEW PIERCE-ARROWS



CONSTRUCTION OF JOHNSON PATENT DEMOUNTABLE RIM

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The brougham-landaulet and the suburban-landau are arranged with unusually wide side windows, and are built with only flat roofs. All standard dome roofs have arch doors. All standard and optional flat roof designs are built without the arch doors.



THE FOUR-SPEED GEARSET SHOWING INTERLOCKING MECHANISM

The fenders are of new and wider design and are calculated to give better protection against mud and water than formerly. A Pierce top which has been named a Solitaire because it can be operated by one person, is standard equipment on all the touring cars. This year the standard touring cars are fitted with individual front seats arranged with a space between to give easy passage from the front to the rear compartments. An undivided front seat will be provided, if specified, at no extra cost. All the Pierce cars continue to be built with right drive and right control.

Two electric lights are provided in the backs of the touring car front seats to light the tonneau steps. The tail light and license illuminator are now combined in a single unit, and a rear bumper protects the gasolene tank against collision. The headlights are carried on the front fenders, as in series-two, but they have been moulded into the fenders with a more graceful curve and are now one of the most perceptible points of difference between the series-two and series-three models.

All three Pierce-Arrows are built along similar lines. The 66 horsepower is known as the 66 A-3; the 48 as the 48 B-3 and the 38 as the 38 C-3. The power plants of all these chassis are, of course, different in size, the largest being 5 by 7; the 48, 4.5 by 5.5, and the 38, 4 by 5.5 inches. With the exception of the differences in size, lines of design of these three models are entirely similar and a description of the Pierce-Arrow product can be hence given as a unit.

Cylinders are cast in pairs and have interchangeable inlet and exhaust valves located on opposite sides of the cylinders. The crankshafts are provided with seven bearings and each bearing is lined with a white bearing metal that is imported from England.

One point in Pierce-Arrow practice which is considerably different from that generally employed is the use of a built-up cam shaft. The cams are pinned to the shaft and the Pierce company states that out of 165,000 camshafts they know of less than ten cases in which the holding pins have sheared or become loose.

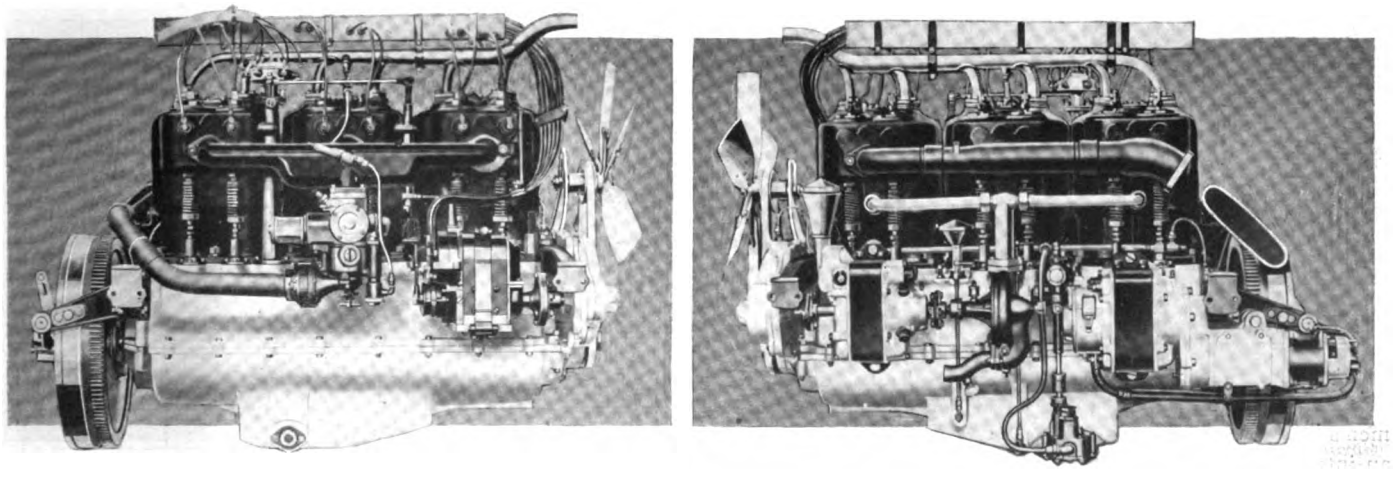
Pierce-Arrow cars are lubricated by forced feed. The oil is carried in a reservoir beneath the crankcase and such a distance down that it is impossible for

SPECIFICATIONS OF THREE PIERCE-ARROW MODELS.

Model	66A-3	48B-3	38C-3
Price:			
Touring	$6,000	$5,000	$4,300
Five-passenger	5,900	4,900	4,300
Limousine	7,000	6,000	5,200
Roadster	5,900	4,900	4,300
Vestibule Brougham	7,200	6,200	5,350
Color	Blue, green or maroon	Blue, green or maroon	Blue, green or maroon
Make of motor	P-A	P-A	P-A
Number of cylinders	Six	Six	Six
Shape	T-head	T-head	T-head
How cast	Pairs	Pairs	Pairs
Bore	5	4.5	4
Stroke	7	5.5	5.5
S. A. E. horsepower	60	48	38
Magneto	Bosch	Bosch	Bosch
Carburetter	P-A	P-A	P-A
Starting-lighting	Westinghouse	Westinghouse	Westinghouse
Clutch	Cone	Cone	Cone
Gearset	4-speed	4-speed	4-speed
Wheelbase	147	142	134
Front tires	37 x 5	37 x 5	36 x 4½
Rear tires	38 x 5½	37 x 5	36 x 4½
Wheels	Wood	Wood	Wood
Steering	Right	Right	Right
Control	Right	Right	Right
Make of axles	P-A	P-A	P-A
Type of rear axle	Semi-floating	Semi-floating	Semi-floating

Options: Wire wheels extra; color.

Equipment: Solitaire top, windshield, speedometer, clock, Silvertown cord tires, Johnson rims, electric horn, power pump, ventilators, tonneau lamp, tire carriers, tools, etc.



INTAKE AND EXHAUST SIDES OF THE PIERCE-ARROW SIX-CYLINDER MOTOR, SHOWING LOCATION OF WESTINGHOUSE ELECTRIC LIGHTING AND ENGINE STARTING UNITS

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the connecting rods to dip into it. A gearpump driven off the camshaft forces the oil through a long horizontal tube from which it is distributed to the two end and central main bearings and to the timing gearcase. From the bearings to which the oil is pumped it passes by means of the hollow crankshaft to the other main bearing and to the big end bearings of the connecting rod. At each of these points there is a hollow core through which the oil is forced to the bearing surfaces.

The connecting rods carry leads up which the oil passes to the wristpin bearings and through the hollow wristpins to the walls of the cylinder. On the end of the horizontal main oil load there is a pressure gauge which registers the pressure under which the oil is being fed. This system is designed to be positive and to vary uniformly with the speed of the motor. While there is no splashing of the oil all the interior parts of the motor are reached by the spray thrown off by the connecting rod through centrifugal force.

The electrical equipment includes a starting and lighting system and two independent ignition systems. Starting and lighting is taken care of by a Westinghouse two-unit outfit which operates at six volts. All the wiring throughout the car is done by the single wire system, the return conductors being carried in copper tubes attached to the frame. The ground connections are soldered to the copper tubes and in connection with the chassis frame form the feed conductors of the circuits. An overrunning clutch breaks the connection between the cranking motor and the engine when the crankshaft is driven under the impulses of the engine. A feature which is of importance in the installation of the starting system is the encasing of all electrical units, such as the gears, shifting rods, starting switch, etc. The main source of ignition current is provided by a Bosch magneto, while for the secondary ignition system the storage battery is used as a source of current supply through separate induction coils and commutator.

The carburetter is the same in all essential details but the jet sizes, for instance, had to be changed in shifting from the gravity to pressure feed.

The Pierce cone clutch is distinctive in that it is kept constantly lubricated by means of an oil ring so designed that a small quantity of neat's foot oil is held constantly in contact with the leather. In order to gain additional smoothness flat springs are placed beneath the leather surface of the clutch.

Four speeds are provided; this gearset is a sliding selective design, held in an aluminum alloy case. This case is divided into two separate sections to permit of ease in assembly and to cut down to the limit repair costs. An air pump for inflating tires is connected through a clutch to the gearbox countershaft.

The drive shaft is provided with a universal at both ends and also a sliding joint at the rear to compensate for the vertical free motions. There is a torque rod also for taking the drive, and this is fitted with a spring cushioned and swiveled front support and a pivoted rear connection to take all the torsional strains.

The bevel pinion shaft housing is separate from the axle housing, but is bolted securely to the latter.

The axle is of a semi-floating design, the axle shaft being of chrome nickel steel and ground to size in order to give it the maximum torsional strength. The axle housing encasing the driving shafts is of nickel steel, brazed and riveted into the pressed steel housings enclosing bevel gear and differential assembly.

The front axle is an I-beam, having a long drop which commences directly at the steering knuckle and sweeps into the center of the axle in a gradual curve. The steering torque rod is at the level of the lower part of the axle and the steering gear itself is a multiple screw and nut type of semi-irreversible design. The gear ratio of the steering gear is 1.5 to 1 in favor of the driver. Three-quarter elliptic rear springs are used.

Gray & Davis Representatives During Six-Day Convention



TOP ROW, LEFT TO RIGHT—MESSRS. MAIR, ACKER, MAXWELL, COOK, TICHENOR, HODGES, CARR, GREENLEAF AND WOODS; LOWER ROW, LEFT TO RIGHT—MESSRS. HASKEL, GASKEL, SACKS, SCHWARTZKOPF, GRAY, WM. H. GRAY, WACKWITZ, MOSES, HOYT AND DRIVER

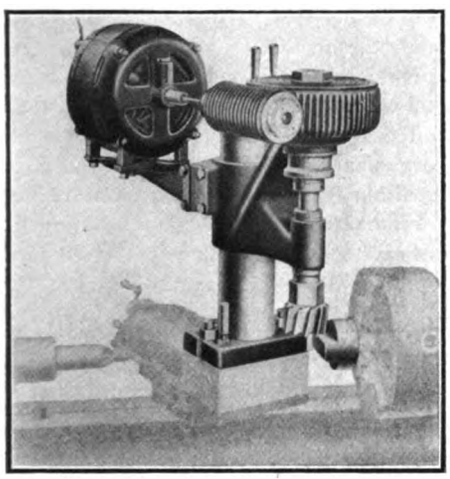
The semi-annual Gray & Davis salesmen's convention ended August 8, after an interesting session covering six days. The 1915 starting-lighting systems were discussed, analyzed, and every detail of manufacture inspected. One of the features was a trip by motor car to the lamp factory at Amesbury. From here the members drove to Ferncroft Inn, where they were joined by the various department heads, general manager and sales manager. Afterwards the members of the conference were entertained at dinner by President Gray. The next convention will be held early in January, 1915.

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Device Will Make Any Lathe Cut Keyways

Simple Attachment, Easily Applied, Is Practical Milling Machine—2 to 3 Cents an Hour to Operate

A lathe is the first machine tool to find a place in a repair-shop; it is capable of a wider range of work than any other piece of apparatus in the establishment, and there is no substitute for it. Not only is a lathe useful as a lathe, but by the use of various attachments it can be made to do a great deal of work that is not lathe work in the strict sense of the word.



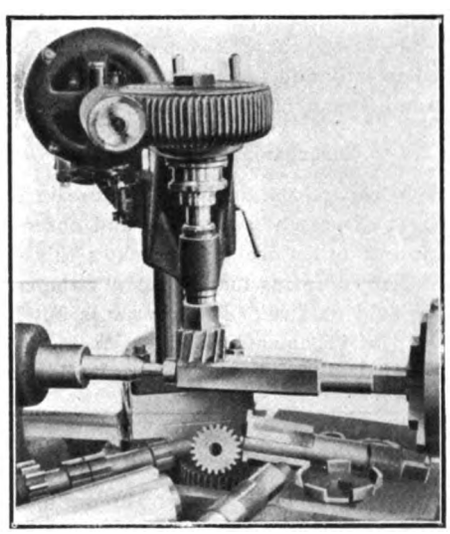
The attachment is bolted to the tool holder and moved with the carriage; illustration shows milling operation on a coupling

In the small shop where machine tool work other than lathe work is the exception lathe attachments of various kinds are particularly valuable, and if used with judgment they are capable of producing surprisingly good results. A plain lathe may be fitted with attachments for milling in nearly all of its branches, gear cutting, taper turning and boring, internal and external grinding, shaping, and so on, and the attachments built for such work by reputable makers are substantial, accurate and suitable for real commercial work.

A milling attachment that is adapted to a wide range of uses is manufactured by the Cincinnati Pulley Machinery Co., Cincinnati, O., and is shown in the accompanying illustrations. The simplicity of the device is one of its strong points.

A vertical column with a rectangular base for bolting to the tool carriage of the lathe carries a casting bored to fit the column and adapted to be clamped at any height. The casting carries a bracket in which runs the vertical cutter spindle. The lower end of the spindle is adapted to receive cutters of various kinds, while at the upper end of the shaft is a large gear meshing with a worm driven by a small electric motor mounted on a bracket on the opposite side of the casting. The teeth of the gear are very wide, thus providing ample wearing surface, and the pitch is sufficiently fine to give a gear ratio of 72 to 1.

The motor is rated at ¼ horsepower and its normal speed is 1,700 revolutions per minute, which gives a speed of 24 revolutions per minute of the cutter spindle. The motor can be furnished for practically any current supply, either alternating or direct, and is connected by means of the ordinary cord and plug to a lamp socket.



Method of applying the attachment when shafts require to be splined or existing splines trued; the cutter speed is 24 revolutions a minute

As for the construction of the attachment, the column is 3⅛ inches in diameter and accurately finished. The spindle is of high-carbon steel and runs in bronze bearings; the worm is of hardened and ground steel, and the gear is of bronze.

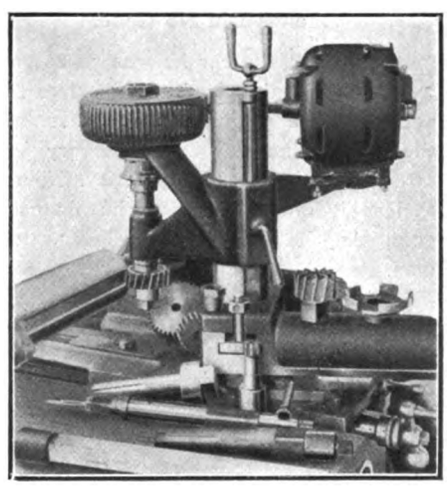
Though the illustration does not show it, the worm and gear run in a bath of oil, and by the use of a special retaining device leakage of the lubricant is prevented. Annular ball-bearings are used on the worm shaft and gear.

A vertical screw running down one side of the column permits a micrometer adjustment of the cutter edge, and a screw clamp retains the adjustment. The spindle is designed to take cutters with one-inch hole. No cutters are furnished with the machine because of the varied requirements of users in this respect.

Work to be done by the attachment may be placed in the chuck and, if of considerable length, the opposite end may be supported by the tail stock center. If a piece is short it will not require the additional support. It goes without saying that the lathe bearings must be without shake and that end play in the lathe spindle will preclude the possibility of really accurate work. The same principle applies in the case of the tool carriage, the slides of which should be properly adjusted to eliminate lost motion.

The cutter is adjusted as to height by the adjusting screw and is fed up to its cut by the slide rest screws. By using appropriate cutters shafts may be squared or splined, keyways cut, whether of the ordinary type or Woodruff. Hexagons and other polygons can be cut and teeth formed for starting crank ratchets or jaw clutchers. Owing to the adjustable feature which permits the raising and lowering of the cutter, it can be used on practically any lathe of reasonable size. The price of the milling attachment is $95 f. o. b. Cincinnati.

As for the cost of running the apparatus, it would depend considerably upon the amount and weight of the work. Running at full capacity a ¼-horsepower motor will draw something like 200 to 300 watts which, at the rate of 10 cents per kilowatt, will cost 2 to 3 cents.



All repairmen have at some time a keyway to cut; this illustration shows the ease with which the operation can be done with this attachment

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WIDE-AWAKE MERCHANDISING

BEST MEN CANNOT SELL IF THEY ARE NOT ORGANIZED

One Dealer Had a Fine Car and Good Salesmen But His Trade Dwindled and He Went Out of Business—He Has Learned the Value of Organization.

It has been said that "organization" is the mystic word that spells success or failure for the motor car dealer. Think it over and you will quickly agree that there is much of truth in the remark For without organization, systematic effort on the part of himself and his coworkers, the dealer can accomplish very little.

Everywhere there are notable examples of the failure of dealers through lack of proper organization. A dealer in a large southern city secured the agency for a high-priced, well-built car of splendid national reputation. He rented a beautiful store. He had generous backers. He hired salesmen. He worked hard himself, but he could not sell enough cars to make a profit. He lost steadily.

Change Did No Good.

He thought the car he was representing was too high-priced. He secured the agency for a popular six at just half the price. The new car had every feature that entitled it to popularity. Nevertheless it did not bring him financial gain. And he himself was a clever salesman.

He had never managed a business. He did not know how to organize his force of workers into a solidly welded unit. He did not know how to direct the efforts of his salesmen to secure best results. Each man was working independently and individually. No man thought of the organization. Each put his own interests first. No one taught his men the advantages of team work. There was jealousy and bickering and hard feeling. Firing one salesman and hiring another did nothing more than temporarily relieve the trouble. At the end of two years the concern was broken financially and the dealer forced to seek employment in another line.

Disorganization the Fault.

Looking back upon his venture in the light of present experience and observation of other dealers' successes this ex-dealer confesses that it was not the cars he sold that ruined his business but his lack of organization.

"If I had known how to build and keep an organization I would be making money today," he avers. "I had an idea that simply hiring good men and supplying them with a good article to sell and treating them right would put me on my feet. I learned that that was only the beginning. I would today deem my organization of more importance than the car I sold. And first, last and all the time I would be building a real organization. For I know now that the real big successes are built more on right organization than upon any other one thing."

CALL IN THE JUNKMAN AND HAND HIM THAT UGLY MESS

It is no longer considered good form to allow a junk pile to accumulate in the immediate vicinity of the salesroom. The cars-that-have-been are not half so interesting as the cars-that-are.

Oh! you say, you never see that except in the smaller garages. Perhaps not; but even the dealer of modest size needs to keep his negative advertising down to the minimum. If that pile really belongs to the junkman let him have it now!

We desire to announce our appointment as Eastern distributors for The Thomas Jeffery Company, manufacturers of the Jeffery car, now being produced in four and six cylinder models at popular prices.

In addition to this line we will continue to offer the National and Waverley cars, and will have all models on exhibition in our new showrooms, at 1759 Broadway, New York City.

Poertner Motor Car Co., Inc.

WHEN THE POERTNER MOTOR CAR CO., NEW YORK CITY, TOOK ON THE JEFFERY THIS NEAT ANNOUNCEMENT WAS MAILED TO 2,000 OWNERS AND LIVE PROSPECTS—THE CARDS COST ABOUT $10 A THOUSAND

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INVESTIGATE WHEN YOU BUY

If You Don't Need Printing Don't Get It.

Before you invest a lot of money—or even a modest sum—in blotters, novelties, calendars and other advertising devices, find out exactly how you are going to use them. Don't take the salesman's estimate of the quantity you need.

Find out. Know just how many you want. It may save you many regrets.

A certain dealer in tires and tire repairs and service in a Western city, that covers considerable area and has several thousand motorists, invested in enough colored blotters to cover the complete mailing list of car owners three times. As can well be imagined it cost a pretty penny in postage besides the cost of the pretty blotters. What did it do for him? He says it did absolutely nothing. He will never use the scheme again.

Try It on a Few First.

It would have cost less in every way to have tried out the scheme on a picked list in the neighborhood to which he might legitimately expect to cater. The scheme might have worked for a downtown or centrally located place of business. But for an uptown store—and a long way uptown at that—it was a mighty poor scheme and it showed that the dealer was not as good a buyer as the salesman was a salesman. But why wait till you have spent the money beanalyzing your situation?

Too many dealers are inclined to say "Shoot 'em out to the entire list!" forgetting that half may be waste. If you are going to spend any money on direct advertising of any nature study the list carefully and know every name to which you are mailing advertising matter.

BE ON THE JOB FIRST AND BE READY WHEN YOU ARRIVE

Being on the job first is a great advantage for any salesman. But it loses its force if he does not have his plans and his talk shaped right.

"That salesman isn't on the job," remarked a big lithographer of an electric car salesman who had just left the room.

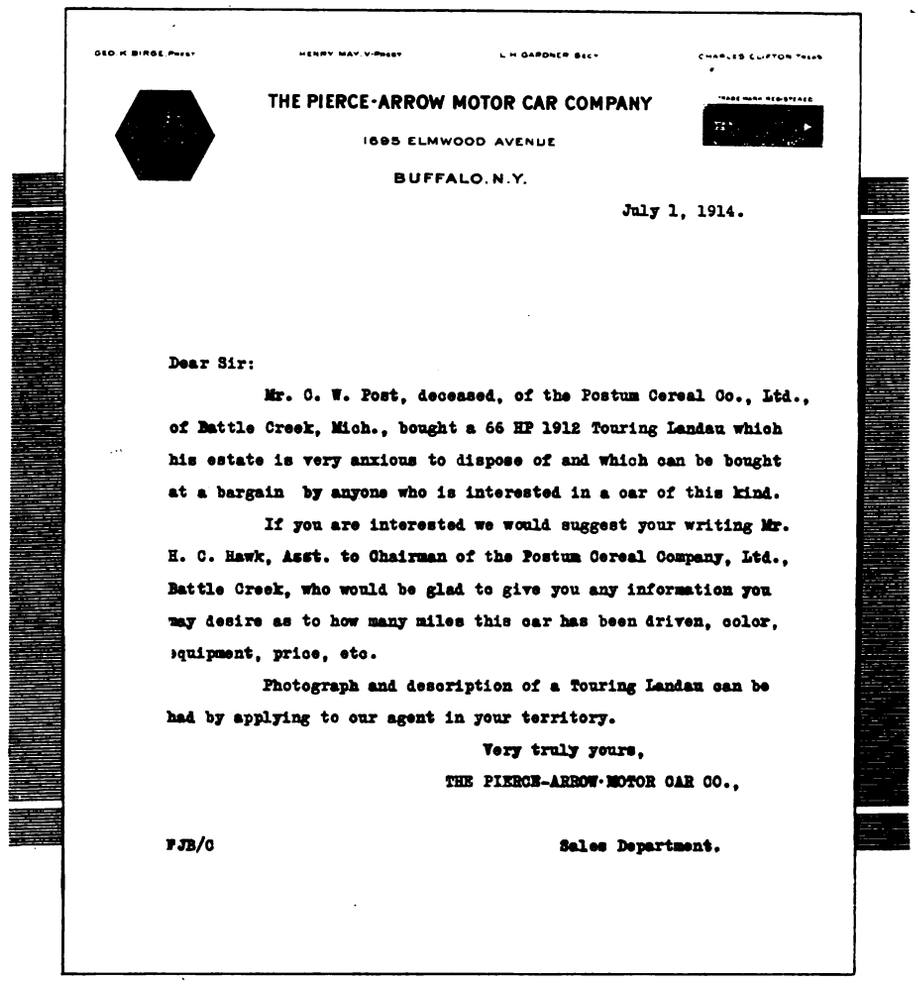
"He could have made the sale of two electric cars—one to me and one to my partner—months ago.

"Six months ago I told him we were going to buy a couple of cars later in the season—and yet he has never offered to give us a demonstration or shown in any way that he was interested. If we had a lead like that given us believe me we would either have the order or know that we were out of it by this time."

What was the trouble? The salesman for the electric car knew his man well, intimately. He felt sure he would get the order when his friend wanted to buy—and so he did not push the sale. And all the time his friend was secretly resenting the fact that the salesman did not get after him.

Doesn't it often happen that way? And is it not true that a prospect is a prospect whether a friend or not and should be treated as such? Even if you do know him well, that is no safe and certain cinch that he must buy from you. But if you show eagerness for his business and get after him hard the chances are much more in your favor.

But there again, you must know your man. And you must look at him mentally from the standpoint of his being a possible customer rather than from the viewpoint of friendship.



GEO. H. BIRGE, Pres't. HENRY MAY, V.-Pres't. L. H. GARDNER, Sec'y. CHARLES CLIFTON, Treas.

THE PIERCE-ARROW MOTOR CAR COMPANY

1695 ELMWOOD AVENUE

BUFFALO, N.Y.

July 1, 1914.

Dear Sir:

Mr. C. W. Post, deceased, of the Postum Cereal Co., Ltd., of Battle Creek, Mich., bought a 66 HP 1912 Touring Landau which his estate is very anxious to dispose of and which can be bought at a bargain by anyone who is interested in a car of this kind.

If you are interested we would suggest your writing Mr. H. C. Hawk, Asst. to Chairman of the Postum Cereal Company, Ltd., Battle Creek, who would be glad to give you any information you may desire as to how many miles this car has been driven, color, equipment, price, etc.

Photograph and description of a Touring Landau can be had by applying to our agent in your territory.

Very truly yours,

THE PIERCE-ARROW MOTOR CAR CO.,

FJB/C Sales Department.

WHEN THE PIERCE-ARROW COMPANY HAS A USED CAR BARGAIN IT SENDS A LETTER TO ITS DEALERS AND LETS THEM KNOW ABOUT IT—IT HELPS MOVE THE CAR AND GIVES SOME DEALER "JUST WHAT HE HAS BEEN LOOKING FOR"

TAKE NOTEBOOK TO SALES CONVENTION

Don't Be Afraid Someone Will Think You Are a "Smart Aleck"—Be One.

Going to a sales convention some time this month?

If you are, don't be afraid to take along a nice handy pocket notebook and a good soft pencil. It used to be thought that the fellow with the notebook and pencil was a "smart Aleck." Now we **know** that he **is**—a good deal smarter than the fellow who pays for an expensive trip, takes the time away from business and comes back with nothing new to put into his business. Nab the good ideas as they are offered and bring them back home and use them.

And if you have any good ones don't be afraid to let the others share them.

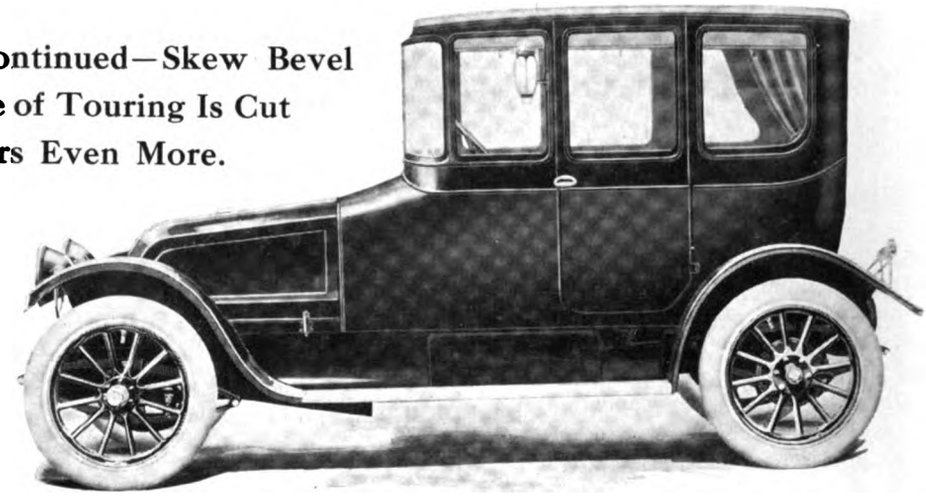
What You Are, Not What You Say!

The salesman wins confidence by what he is rather than by what he says. Character speaks when he is silent.

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Franklin Refined and Price Is Made Less

Single Chassis Production Continued—Skew Bevel Gears Used in Axle—Price of Touring Is Cut $150 and Enclosed Cars Even More.



GRACEFUL AND CLEAN-CUT LINES CHARACTERIZE THE FRANKLIN SEDAN—$3,000

In bringing out the Series Six car, which followed the Series Five without a break in production, the most important change that the H. H. Franklin Mfg. Co., Syracuse, N. Y., has made is the reduction of $150 in the price of the touring car and roadster, while on the enclosed cars the reduction is still greater. Concentration on one model, inaugurated a year ago, and the use of special machinery and improved factory methods have practically doubled the factory capacity and this is assigned as the reason for the lessening of the price.

The body lines of the Franklin are now more graceful, the body is larger, the seat sides are higher and the upholstery is finished more luxuriously than before. The sloping hood has been continued, but with better lines, and a shutter effect at the front of the hood instead of the old type grill has given a more sturdy and powerful appearance to the car.

Mechanically the car remains practically the same as a year ago. In the motor only one change will be found and that is the fitting of the oil adjustment on the cowl board. The starter is lighter and more accessible than before, and, while it is still the Dyneto system, it has been improved so that it is now 40 pounds lighter than the model used last year. Both the commutator and brushes have been improved to reduce wear at these points and, according to Franklin engineers, give three times the service.

The only other change of importance on the chassis itself is in the rear axle. Skew bevel gears are now used whereas the straight bevel type was employed. These gears are made by the Brown & Sharp Mfg. Co. and have been adopted to obtain more silent action. A number of little details, such as the wing pivot bolts, front springs, magneto attachment, etc., have been improved.

For instance, the magneto is now attached by means of two dowel pins and a divided metal strap over the top in place of the bolted-on brackets used last year. In the front springs the deflection was one inch to 180 pounds. It is now one inch to 200 pounds. No change whatever has been made in the rear springs. In the spring pivot bolts a new bushing has been employed which incorporates a felt washer intended to keep the dirt out and the oil in.

PRINCIPAL DETAILS OF FRANKLIN SERIES SIX

Price:	
Touring	$2,150
Roadster	2,150
Berlin	3,200
Coupe	2,600
Sedan	3,000
Color	Brewster green
Make of motor	Franklin
Number of cylinders	Six
Shape	Overhead valves
How cast	Singly
Bore	3⅝
Stroke	4
S. A. E. rating	31.57
Magneto	Eisemann
Carburetter	Franklin
Engine starter	Dyneto
Lighting system	Dyneto
Clutch	Disk
Gearset	3-speed
Wheelbase	120
Front tires	34 x 4½
Rear tires	34 x 4½
Wheels	Wood
Steering	Left
Control	Center
Type rear axle	Semi-floating

Equipment: Top, power pump, windshield, luggage carrier, speedometer, inspection lamp, tools, etc.

Better equipment is found throughout the car. Most noticeable is the employment of either Goodrich Silvertown cord or Goodyear Power Saver tires as regular equipment. This is in line with the move made by makers of the highest-priced cars for this season.

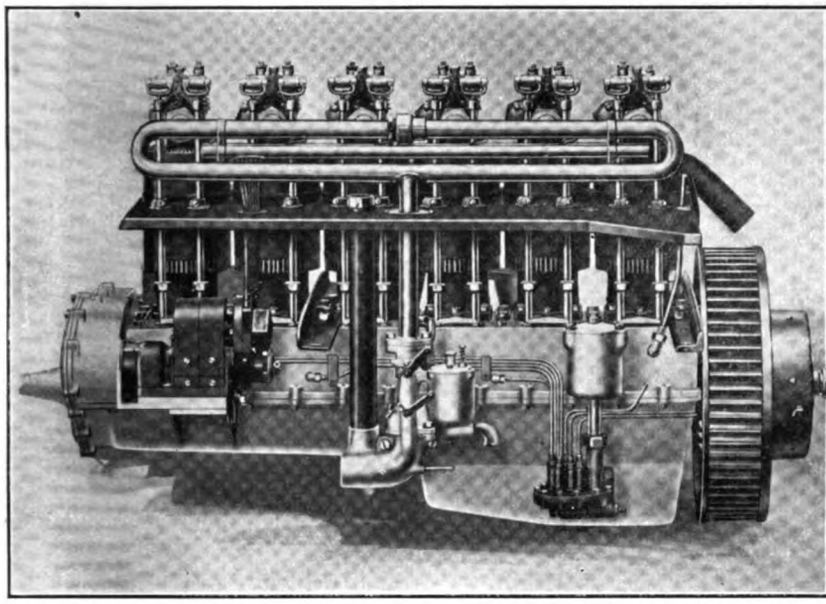
Another provision this year, which is an innovation for the Franklin, is the fitting of a power tire pump. This is a Hartford single-cylinder and the pump itself, together with the bracket supporting it and the clutch for engaging it to the motor drive, weighs only 6.5 pounds. By the use of this power pump the Franklin company claims to have removed the only excuse for the heavier demountable rim in place of the Q. D. type which it employs. This light rim equipment is in line with the work throughout the car; everything has been done to make the weight as low as possible.

The Series Six is equipped with a Golde one-man top with curtains that can be operated from the inside. The side curtains fasten to the windshield, making a weather-tight joint. In adopting this top a new style of windshield had to be fitted; it is a double-glass, rain-vision type, either half of which can be adjusted to any position.

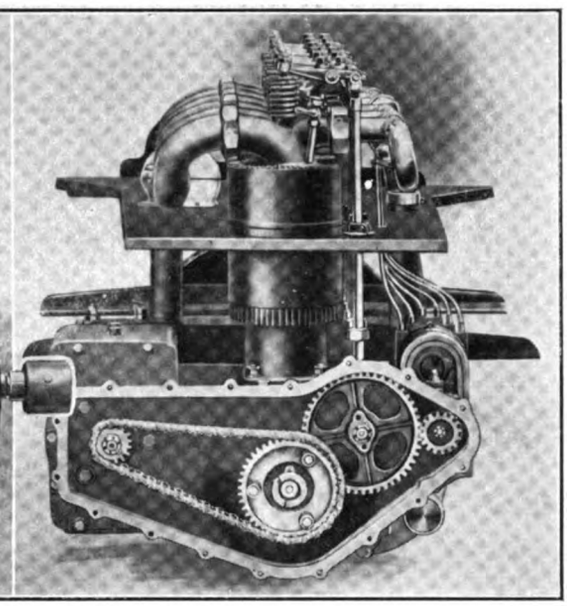
Front doors have been made wider and set back a little, permitting easier passage. The mudguards also are wide, the better to protect the body from mud and water. They are made after the same pattern as the former mudguards but the rivets are now invisible. Side lights have been eliminated, and the headlights have been equipped with two 12-volt bulbs connected in parallel.

The electric terminal connection has been moved under the cowlboard, and a trouble lamp with 12-foot cord is now supplied. The upper hinges of the door are concealed and the door handles are now on the inside. The battery location has been changed; while it was formerly invisible it is now both visible and accessible, having been shifted from the chassis frame to a weather-tight box between the sill and the runningboard. The

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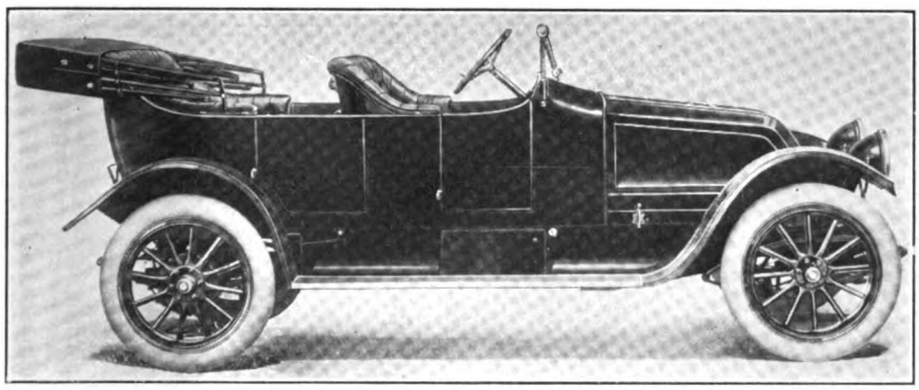
THE VERTICAL FLANGES WITH THEIR METAL JACKETS ARE RETAINED IN THE DIRECT COOLING SYSTEM



SILENT CHAIN CARRIES THE POWER FROM THE STARTER TO THE MOTOR AND VICE VERSA

fuses are also located at this point so that it is easy to reach them for replacement.

The Franklin is one of the few cars on which a luggage carrier is regular equipment. The design of this, however, has been improved still further, and it now folds up closer to the body. Extra tire carriers are also provided on the rear of the car. The instruments for the control of the car are now mounted on a cowl control-board directly below the windshield. This board carries a speedometer, horn button, hand pressure pump, hot and cold air control, carburetter adjustment, oil control and starting and lighting switches. This gives a neater and more compact bank of switches than the previous design. The speedometer is also better, being a 60-mile Warner, with a more accessible and more readily disconnected drive.



DOORS HAVE BEEN MADE WIDER IN THE FRANKLIN TOURING MODEL—FRONT DOORS HAVE BEEN SET BACK A LITTLE

The air cooling features of the Franklin car have not been changed. In fact, none of the typical features of Franklin design, such as wood sills, elliptic springs and light weight are altered in any way. The six cylinders are cast independently and have a bore of 3.625 and a stroke of 4 inches. The valves are located in the head of the motor.

Each cylinder has an independent valve mechanism operated by an overhead rocker arm and each valve can be removed and reassembled without interfering with any other part of the mechanism. The vertical air flanges surrounded by metal jackets are the main source of heat radiation in the direct cooling scheme used on the Franklin cars. The fan is a product of the Franklin company, having a series of blades which resemble the blades of a turbine.

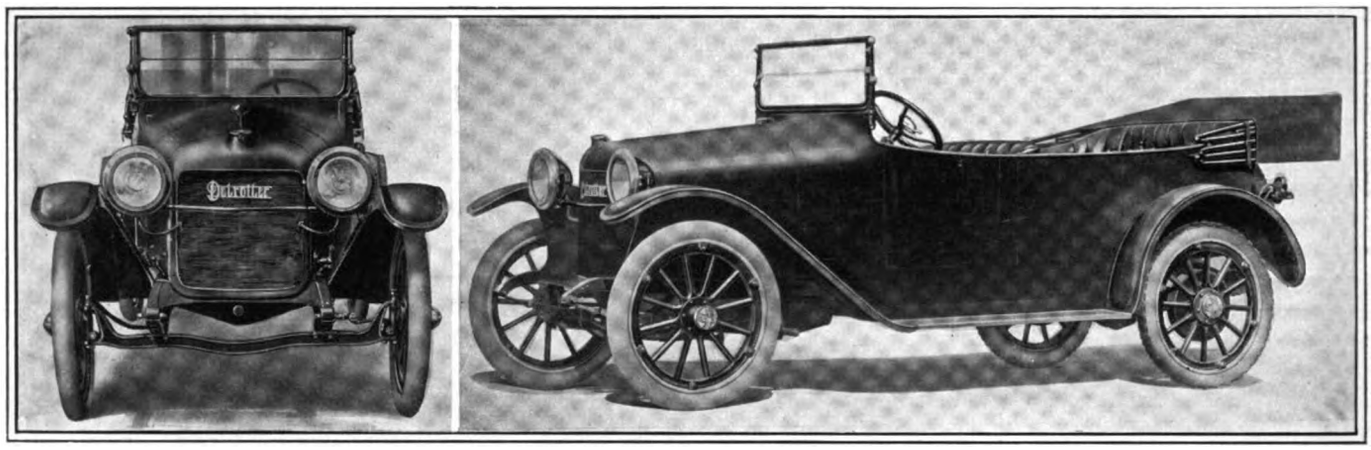
The seven main bearings which carry the crankshaft are lubricated by oil taken from a reservoir in the lower part of the crankcase and forced by means of a gear pump driven off the camshaft through a series of individual leads, one of which passes to each main bearing. The oil sight feed on the dash is in the direct circulation line and by its use the operator can at all times note the amount of oil passing through the system.

The 12-volt Dyneto lighting and starting system consists of a motor generator connected to the crankshaft by a silent chain. A storage battery floats on the line. The winding of the generator is such that it acts as a generator at speeds of above 12 miles an hour and begins to charge the storage battery. At speeds below 12 miles an hour the motor generator acts as a starting motor and draws current from the battery which is utilized in cranking the engine. When the car is stopped there is a reverse current cutout which prevents the battery from discharging itself through the motor generator. For ignition an Eisemann magneto is used. The Franklin carburetter is the same.

Gasolene is fed by gravity. The tank is located under the front seat and has a capacity of 14.5 gallons. There is a reserve tank of 2.5 gallons. There is a gasolene valve and separator in one fitting on the bottom of the gasolene tank and the handle for operating it is on the top of the tank under the driver's cushion. The valve provides a main reserve and closed position and in this way the driver is always certain of sufficient fuel to reach the next supply station should he be caught unawares.

No change will be found in the multiple-disk clutch running in oil and housed within the flywheel of the motor. Three speeds are furnished and the gearshifting mechanism is mounted in the center. On direct drive the reduction is 3.71 to 1. The differential and pinion shafts are carried on roller bearings. Five types of bodies are fitted.

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DETROITER 1915 BODY IS LARGER AND LONGER AND FENDERS HAVE BEEN REDESIGNED AND RADIATOR IS CURVED

New Type Body on Detroiter

LEADING FEATURES OF 1915 DETROITER

Price, touring	$1,050
Roadster	1,050
Color	Dark blue
Make of motor	Detroiter
Number of cylinders	Four
Shape	L-head
How cast	Block
Bore	3½
Stroke	5
S. A. E. rating	19.6
Ignition	Westinghouse
Carburetter	Stromberg
Starting-lighting	Westinghouse
Clutch	Disk
Gearset	3-speed
Wheelbase	112
Wheels	Wood
Tires	32 x 3½
Steering	Left
Control	Center
Type of rear axle	Floating

Options: Gear ratio either 4 to 1 or 4.33 to 1.

Equipment: One-man top with cover and curtains, two-part windshield, horn, pump, jack, robe and footrails, and set of tools.

And Wheelbase of 1915 Models Has Been Lengthened—Price the Same.

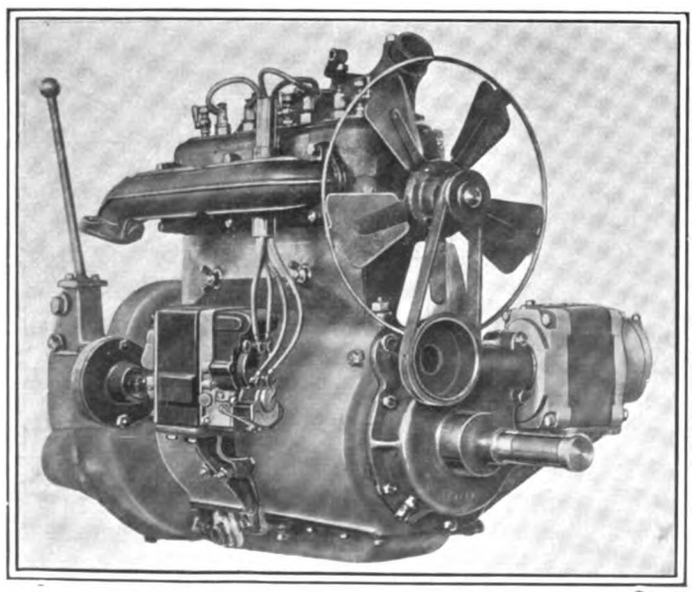
An entirely new body and a considerably increased wheelbase have greatly altered the appearance of the Detroiter for 1915, though the basic features of the car and all the important dimensions, with the exception of the wheelbase, remain unchanged. Notwithstanding the improvements that have been made in the machine the price has not been changed but stands at $1,050 for either touring car or roadster.

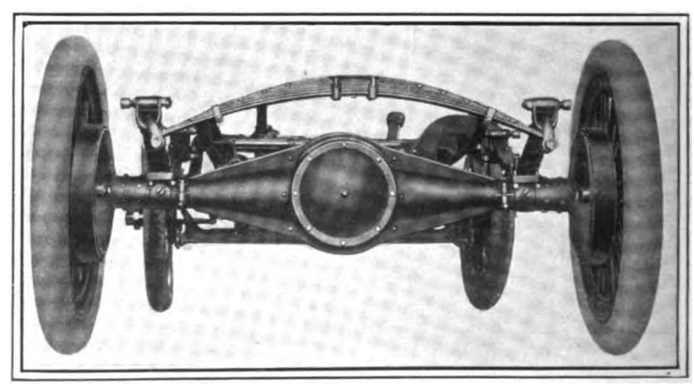
Full equipment is furnished with the car and includes one-man top with cover and side curtains, two-part windshield, horn, pump, jack, robe and foot rails and set of tools, in addition to the Westinghouse lighting and starting system with which is incorporated the ignition apparatus.

The motor is of the L-head type with four block-cast cylinders, 3½ x 5, which gives an S. A. E. rating of 19.6; the valves are on the left side and have the usual enclosure. The Stromberg carburetter has been raised four inches above its former position, the elevation having been made possible by the placing of the gasolene tank under the cowl.

Common practice is departed from in carrying the crankshaft on two annular ball-bearings, which arrangement permits considerable economy in overall length. Carbon steel stems welded to cast-iron heads constitute the valves, which are operated by cams integral with the camshaft. Cooling is by thermo-syphon, the water intake and outlet pipes being 2 inches in diameter. The radiator this year is of curved outline, a form which increases the radiating area somewhat. Lubrication is by splash.

This year the starting motor bolts directly to the front of the engine; last year it was attached by means of a separate bracket.





THE DETROITER THIS YEAR BOLTS THE STARTING MOTOR DIRECTLY TO THE FRONT OF THE MOTOR—CARBURETTER (SIDE NOT SHOWN) HAS BEEN RAISED FOUR INCHES.

THE APPEARANCE OF THE REAR END OF THE CAR HAS BEEN IMPROVED BY SUPPORTING THE SPRING DIRECTLY BY THE REAR CROSS MEMBER OF THE FRAME WITHOUT A BRACKET—AN EXTRA LEAF HAS BEEN ADDED, MAKING EIGHT IN THE CROSS SPRING AND SEVEN IN THE OTHERS.

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Power is transmitted from the motor through a clutch having 23 disks of crucible steel compressed by three coil springs. The gearset, which is mounted as a unit with the rear axle, provides the usual three speeds. The differential and drive gear assembly forms a unit which can be removed from the rear axle without disturbing other parts. An improvement in the 1915 bevel pinion consists in making it adjustable.

The double-row annular ball-bearings carry the differential assembly; the axle is of the floating type. For ordinary service the gear ratio is 4 to 1, but for service in hilly country the gear may be 4.33 to 1 if desired. Service brakes are 14 inches in diameter and the emergency brake 10 inches. Wheels are of wood, shod with 32 x 3½ tires, and the wheelbase is 112 inches, an increase of 8 inches over last year.

The steering gear is a Gemmer, fully adjustable for wear and mounted on ball-bearings. All the instruments, including switches, gasolene gauge, voltmeter, speedometer, instrument light and level warning light, are mounted on an aluminum plate on the cowl board. The oil level warning light is a 1915 improvement; a small red lamp on the dash is made to burn when the circuit is completed by the dropping of a metal float.

Most of the changes in the new model are in the body work. The design is carried out in boat-like lines, and though the body is larger and longer than that of last year's car it is 1½ inches lower. The doors are 24 inches wide as against 16½ last year; the rear seat is 45 inches wide instead of 41; the leg room has been considerably increased in the front compartment; and the runningboards have been cleared, the battery box now being slung under the frame.



WITH THIS BODY THE VIM IS LISTED AT $695—S. A. E. HORSEPOWER IS 14.4

SPECIFICATIONS OF VIM LIGHT DELIVERY CAR.

Price:	
With small steel panel body,	$635
With large steel panel body,	685
With flare body and top,	695
Capacity	1,000 pounds
Color	Brewster green
Make of motor	Northway
Number of cylinders	Four
Shape	L-head
How cast	Block
Bore	3
Stroke	4½
S. A. E. rating	14.4
Ignition	Atwater-Kent
Carburetter	Schebler
Gearset	3-speed
Clutch	Cone
Wheels	Wood
Wheelbase	93
Tires	30 x 3 or 3½
Steering	Left
Control	Center
Make of rear axle	Weston-Mott
Type of rear axle	Semi-floating

Equipment: Storm front, back and side curtains, lamps and tools.

Touraine Makes New Vim Truck

Capacity 1,000 Pounds—Lists at $635, $685 and $695 —Northway Motor.

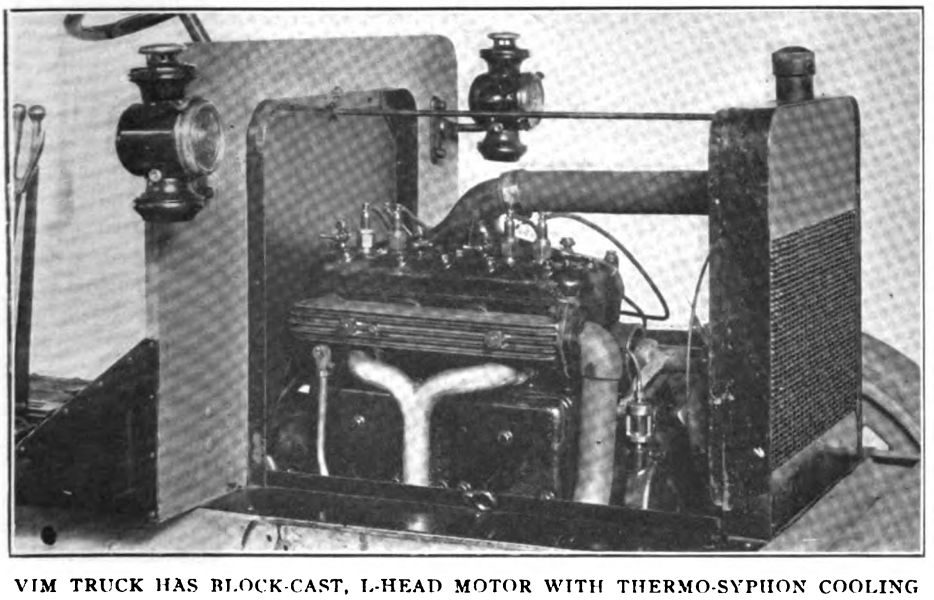
A commercial vehicle for light delivery service with a maximum capacity of 1,000 pounds, is manufactured by the Touraine Co., Philadelphia, Pa., maker of the Touraine six. The design of the little truck is new throughout, the model being a new one, and it is built with a view to commercial work exclusively.

The price varies according to the type and size of the body; with a pressed steel body of the fully enclosed type and 30 x 3 tires the price is $635; with a larger body of the same type and 30 x 3½ tires, $685, and with flare body, top and side curtains and 30 x 3½ tires, $695. A wagonette body is also mounted which brings the price to $785.

The equipment is that which usually goes with vehicles of this type and includes storm front, back and side curtains, tools and set of oil lamps.

The motor is a block-cast Northway, with L-head cylinders; the bore is 3 inches, the stroke 4½, and the S. A. E. rating is 14.4 horsepower. Cooling is by thermo-syphon system with water pipes two inches in diameter. The core work is so carried out that the cylinders are entirely surrounded by water. The radiator is of ample size and is surmounted by an unusually large water tank.

Lubrication is by positive force feed



VIM TRUCK HAS BLOCK-CAST, L-HEAD MOTOR WITH THERMO-SYPHON COOLING

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and splash, the oil reservoir holding 2½ gallons, which is sufficient for approximately 600 miles running. Ignition is by Atwater-Kent unisparker taking current from a set of dry cells. The carburetter is a Schebler, exhaust jacketed.

The gearset is bolted up to the rear end of the gearcase, making a unit power plant with the flywheel enclosed; three speeds are provided, the top gear giving the car a maximum speed of 30 miles an hour. The clutch is a leather-faced cone 12 inches in diameter and 2½ inches wide. An oil drain in the bottom of the clutch housing provides a means for draining off any oil which might work through from the crankcase or gearcase to the detriment of the clutch action.

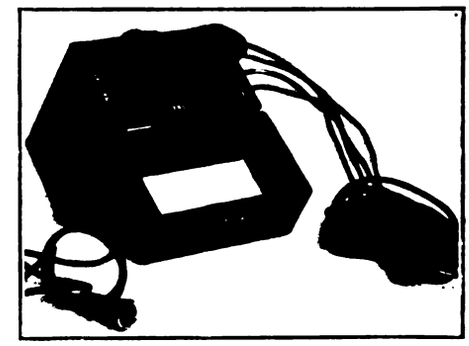
The front axle is an I-beam forging, and the steering connections are heavy and substantial, the drag link being spring cushioned. All the joints of the steering gear are fitted with grease cups; the steering gear is of the worm and gear type, of a design adapted to commercial service. The front wheels run on ball-bearings.

The wheels are of wood, the wheelbase is 93 inches and the tread standard. On the smallest model the tires are 30 x 3 as standard equipment, and all the others 30 x 3½; the larger size tires will be fitted to the small model at an additional cost of $20. The differences in the sizes of the various models are in the bodies only, but one chassis being manufactured.

Contracting and expanding brakes are mounted on drums 2¼ x 10, and are faced with Raysbestos; both brakes are equalized. The frame is of pressed steel, of Parrish make, and all springs are semi-elliptics 3 inches wide. The gasolene tank is located under the seat and holds 9 gallons. The carburetter is fed by gravity, its position being sufficiently low so that there is ample pressure. The steering wheel is on the left side and the control levers in the center. The final drive gear ratio is 4¼ to 1 and the maximum speed of the car 30 miles an hour. The finish is Brewster green with black moldings.

Dinshah Device Tests Motor Troubles

Is Designed to Locate Electrical or Mechanical Difficulties—How Instrument Operates.



TESTER FOR 4-CYLINDER MOTOR

A testing instrument capable of indicating many of the more common engine troubles has been placed on the market by the Dinshah Sales Corp., 735 7th avenue, New York. The instrument indicates both electrical and mechanical faults, its operation being based on the sensitiveness of the ignition system to conditions existing in the engine.

The tester is enclosed in a leather-covered case and is small and easily carried by the handle attached to it. Opening the deep hinged lid shows that the case is provided with a hood, as the accompanying illustration shows, through which the user looks. Four heavily insulated cables lead in at one side and one at the other; the cables are coiled up in the lid when not in use. Each is fitted with a terminal clip. The instrument shown is for a four-cylinder motor; the number of leads vary in different types, according to the number of cylinders.

In the lower part of the case, visible through the hood, there are four spark gaps and four vacuum tubes, each connected to one of the leads; the fifth lead is a ground wire. To use the device the leads are attached to the spark plug terminals by means of the clips and the ground wire to any convenient metal part of the motor or chassis.

To find out if the magneto is delivering its impulses regularly the spark plug terminals of the motor are disconnected and the tester terminals connected up to the high-tension magneto terminals. When the engine is turned over by hand or by its starting motor the current jumps across the gaps in the instrument and, passing through the vacuum tubes, produces illumination. Uniform color in the tubes and regular sparking at the gaps indicate that the magneto is doing its work properly. The gaps in the instrument are so spaced that they offer a resistance equal to that offered to the passage of current across the spark plug gaps under compression in the cylinders of the engine.

By watching the gaps and tubes and comparing the flashes seen with the printed instructions pasted in the cover of the case, troubles, if any, can be discovered and located. The indications and their interpretations are as follows:

A regular succession of white sparks at the gaps, accompanied by colored flashes in the four tubes, indicates a perfect electrical generating system.

If the sparks miss irregularly the trouble is due to a faulty distributor.

If the sparks skip back and forth regularly in two tubes, a loose armature bearing is indicated.

Sparks missing in two tubes show that the contact breaker is faulty.

All tubes flashing without sparks or with irregular sparks means weak batteries, magnets or loose connections.

Darkness in one tube—no electricity in that cable.

Darkness in all tubes—dead electrical generating system.

Sparks in any tube without a flash show that the engine tester is out of order and should be returned to the makers.

The generating part of the ignition system being in satisfactory condition, the magneto leads are connected up to the spark plugs in the usual way and the motor run under its own power, with the tester terminals clipped to the spark plug terminals and the fifth wire still grounded. Under these conditions there will be no sparking at the gaps, but the tubes will show colored lights or flashes, the portents of which are made plain by the printed instructions:

If all the tubes are flashing the same color, the spark plugs are in perfect condition.

If the motor continues to operate badly the trouble is due to carburation.

If a tube flashes and darkens irregularly there is a leakage of electricity or the plug point is dirty or too close.

A dark tube indicates that that plug is short-circuited.

A blinking tube shows that there is a loose connection.

A tube flashing very dull in comparison with the others indicates that there is a loss of compression.

If a tube sparks when the motor turns slowly it shows that the plug points are too far apart.

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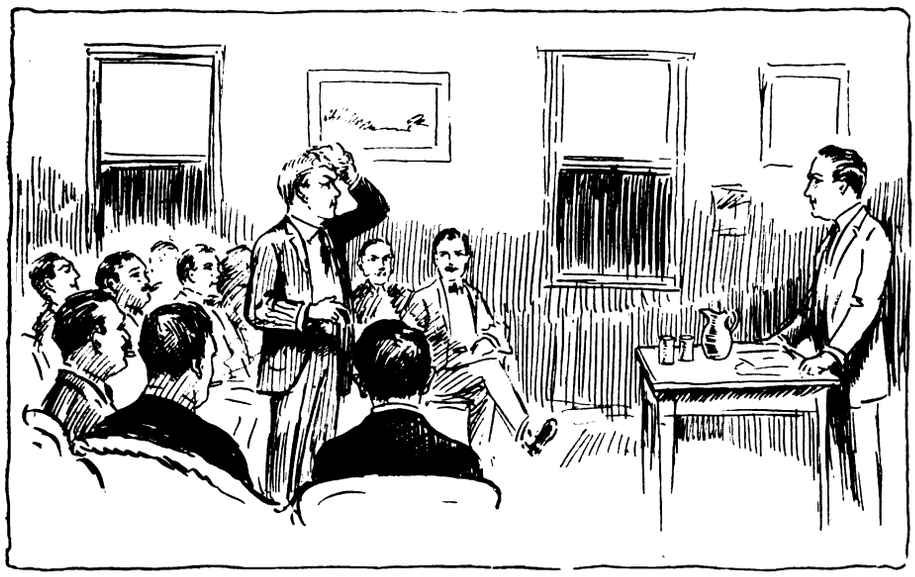
Go Home—Let Your Window Work Nights

Keeping Open Evenings Does Not Appeal to Reilly—But the Window Should Be Made to Work Overtime.

By Ray W. Sherman

The Callawassa Motor Car Dealers' Association was thinking of having a show along with the County Fair in September, so the dealers were holding a meeting. It was the first meeting since the hot weather began.

Barry Manville stood it as long as he could. His coat was off long ago and now he took off his collar and rolled in his shirt.



"FURTHERMORE," REILLY CONTINUED, "I DON'T THINK ALL THE DEALERS ARE GETTING FULL VALUE OUT OF THE EVENING HOURS"

Henry Bennett, of the Redman outfit, looked as cool as December. He never got warmed up even in July and never was known to take his coat off because of the weather man's urging.

Weather and Discussion Warm.

Tommy Trumbull was hot all right, but stylish young men often don't regard it as dignified to take off their coats.

They were all there—Ben Doyno, the supplyman; Lou Bracket, of the Macon; Mergendorfer, the used car man; Billy Temple, and all the rest. The show question was a very lively question and nobody wanted anything done without his being present.

The meeting wished a fine job on Ben Doyno, Reilly and Barry Manville; they were made a committee to investigate and report at a meeting to be held a week later. Then Brackett got up to move for an adjournment, but Barry Manville beat him to it. "Sit down! Sit down, Lou; I'm going to make a speech!"

Brackett sat down.

"Before we adjourn," began Manville, "I would like to bring up another question. It's keeping open evenings."

"Sit down! Sit down!" yelled the crowd.

"I won't sit down!" announced Manville. "It's been bothering me and I want to get the matter on the association records. Most of the dealers in town don't keep open evenings. They close up quite promptly at 6 o'clock——"

"Whaddyuh wanta do, work all night?"

"You'll get pegged out of the union!"

Manville Asks for an Opinion.

Manville bore the interruptions good-naturedly. "But I want to hear what the other members think about it. The season is opening now and every dealer wants the coming year to be the best he ever had. We all advertise our new stuff and want to get the people in. Lots of them come in during the day and I think more of them might come in during the evening if our salesrooms were kept open."

"Why don't you keep open, then?"

"You have my permission!"

Barry smiled and continued: "I don't want to be the only man in town to keep open evenings; I don't want it to appear that I am trying to hog business or take an unfair advantage of a competitor. Neither do I want to be the first one to make a move that is likely to cause a lot of the other dealers to have to do something they don't want to.

Dealers Oppose Working Nights.

"If there's money to be made, more cars to be sold, in keeping open evenings, ought we not to do it? If so, why not do it? But if there is any reason to the contrary then let's not do it. I haven't formed any definite opinion as yet and I would like to know what some of you other felows think about it."

Barry sat down. Three or four got up. And they all opposed keeping open evenings. "There will be so many cars sold this year in Callawassa," said one, "and no more. Keeping open evenings won't make the total sales any greater. If we all stay closed evenings we'll do just as much business as if we stayed open."

Exceptions That Might "Go."

"Yes," said Brackett, "and if a man wants to keep open for a while when he has just received his new cars I don't think anyone will kick. And if he wants to keep open an evening or so a week all through the year I don't think anyone would object, but I don't think it's fair for one dealer to start this open-evenings business when all the others are closed and thereby possibly start a movement that will have us all eventually working overtime."

"That's right, Reilly, say a word," shouted Ben Doyno from the chair, as the little dealer's pate, glistening from many moppings and still damp and moist, stuck up in the middle of the crowd.

"I haven't much to say——"

"As usual," interrupted a brother dealer, and everyone laughed.

"Well, not any more than usual," countered Reilly. "I have often thought of this open-evenings business, but it never appealed to me. I have given the matter

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some consideration and have come to the conclusion that I can do enough work between 8 o'clock in the morning and 6 o'clock at night and don't need to keep open thereafter. And I don't think any of my salesmen are stuck on working evenings, either."

The next man to Tommy Trumbull nudged him in the ribs with his elbow.

"There is no question but that there are people floating around evenings and that some of them might drift into some of our salesrooms if we were open. But a day's work is enough, I think, and I don't think that what we would gain would be enough to pay us. We might make a few hundred dollars more a year, but we would be giving up our evenings and dropping down into the rut of work-and-never-play, and I don't think it is a good thing."

"Righto!"

Not Necessary to Keep Open.

"Furthermore," Reilly continued, after stopping to mop that dome again, "I don't think that all of the dealers in town are getting the full value out of the evening hours. There are prospects floating around town in the evening and it is a good time to get their eye, but I don't think it is entirely necessary to keep the salesroom open to do it.

"A man's business should work for him all the time, but the man ought not to work all the time. Whenever you run an ad in an evening paper and the home-loving prospect sits down and reads that ad, the business is working for the dealer, but the dealer may be home with his wife or down at the corner playing pinochle.

"The prospects who stray around town and pass the salesrooms can be interested in a similar way. Let your windows work for you. Go on home—or somewhere else—when it's quitting time, and let your show windows work for you until midnight, if necessary. A good show window is just as good in some cases as a salesman—if it's a good window.

"I know some dealers in town—I don't mean Barry Manville particularly—whose business ceases to work for them when they lock the door at 6 o'clock. Their windows are as dark as the front of a poker room, and even if they were lighted up they wouldn't attract a h——l of a lot of attention.

"Every one of you men is paying money for his show windows. Every inch of window front represents just so many dollars a year. You could rent space in the rear of a building with a hallway entrance and it would cost you much less than what you pay for a salesroom with a window on the street; whatever that difference in rent is is what you are paying for your windows. It's real honest-to-god cash money; it's no dream. If you don't use the window it's like hiring a salesman and then putting a suit of old clothes on him and letting him sit around the repair-shop.

Good Window a Strong Salesman.

"A good window can be made a powerful evening worker, but it's got to be handled right. The window has got to be fixed up and cleaned up and made to look like a window; not like the front of an eighteenth century hardware store. Electricity doesn't cost a fortune these days; it's cheap. Lighting fixtures won't ruin any man in this building tonight. It doesn't cost much, comparatively, to fix up a window and arrange a striking lighting effect. If anybody wants to know what mine cost I'll show him all the figures and tell him all I can.

"When you go home at night leave the window lighted. If it is necessary during the daytime to have a car in some position where it is not well adapted for night display move it into a good position when you go home at night and move it back again in the morning. Go outside and have your men push the car around until it is in the best position for evening display. A car doesn't necessarily have to stand in one spot because it happened to land there. Move it around once in a while anyway as a matter of principle. It will break up the routine habit in the back of your brain.

Study to Get Good Effect.

"When you have the car in the best position in relation to the lighting effect arrange a neat lettered display on an easel or some such device. Set up a card telling what the car costs and what the principal selling points are. Stick in a few things like this that are brief and can be read by the passerby. If a prospect happens along he will read them, whereas he might not come in even if the salesroom were open. Your selling points will be presented to more people than if you depend on their coming in to get them from your salesmen by word of mouth.

"Stick in a pretty bouquet of flowers. Make the display tasty and attractive and see if it doesn't get attention. If you really want to know how it's panning out sit in a dark corner of your office and watch the people in the street. Have different displays and study their effect. That will give you a line on the most effective arrangement.

"But whatever you do, make your windows work at night. You don't need to keep open and hire an extra salesman to work evenings. Your window is a salesman; all you need to do is make him work. Have a clock arrangement or arrange with some one to turn off the lights late in the evening, but make that window work. As for yourself—go home and forget there is such a thing as a salesroom."

Reilly sat down. Barry Manville got up.

"Mr. Reilly said he didn't mean me in particular," began Barry, "and I accept his statement; but the coat fits me all right and I'm right here to put it on. I know I'm not the livest merchandiser in town, but I do know a good thing now and then when I see it, and I wouldn't wonder but that you'll see Barry Manville's glass-front salesman working for him pretty quick. He's been pretty lazy so far.

"I have thought for a long time that I ought to keep open evenings, but I've changed my mind. When I spoke to the wife and kids about it they cried—honest they did. The little boy wanted to know who was going to play with him evenings, and if anybody asks you you can tell them I am. I thought business was everything, fellows—but it ain't."

Barry sat down and it was funny how sweaty a whole lot of faces seemed to get.

Jury Trial Frees Speeder.

What is believed to be the first jury trial of a violation of the New York speed ordinance has resulted in an unqualified victory for the person against whom the charge was lodged. The jury required five minutes to acquit him after a local magistrate had fined him $50. Judge Crain, in general sessions, rendered the decision.

It appears that Silas Actell drove his car at 18 miles an hour at 10 o'clock at night upon a street which was practically empty of traffic. The officer who made the arrest claimed that Actell was driving 26 miles an hour, but this was disproved and the charge of 18 miles an hour substituted. The magistrate claimed that this constituted a violation of the speed law, which prescribes a rate of speed not in excess of 15 miles an hour, and fined Actell $50 with the permission of an appeal.

In rendering the decision, Judge Crain stated as his opinion that a speed of from 15 to 20 miles an hour is safe provided the streets are not crowded and that the operator gives no evidence of reckless driving.

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Danville Garagemen Have Made Business Better by Organization

Have Driven Out Curbstone Oil and Gasolene Peddlers—Now Seek to Combat Mail Order Men—The Beginning Was Hard.

From the time the motor car and garage business began in Danville, Ill., the dealers and garagemen until last winter were beset by many problems. They believed there was more money in the business but they could not get it out.

Gasolene and oil peddlers were one of the things which took a profit out of the garage business; they peddled gasolene and oil at the curbstone and filled a car wherever they could find a customer.

Association Has Done Much.

List prices on tires were a joke and there was no such thing as a schedule of repair prices.

Today, however, through the Danville Trade Association many of these abuses have been remedied. There is a schedule of repair work and the dealers are sticking to list prices of tires. The curbstone gasolene peddler has been forced out of existence and the association is now on the trail of the curbstone motor car dealer.

The mail order business has proven a strong competitor of dealers in accessories, and the association is now endeavoring to meet this opposition successfully; through the local newspapers the association is endeavoring to persuade the people in Danville that they should trade at home.

The things the association has accomplished are in a way important and the association of itself is important, but the real big important feature of the situation is that until the association was formed it was impossible to remedy conditions and that those things which have been done have been made possible by organization.

Secretary Analyzes Situation.

E. W. Seawright is secretary of the association and he thus sums up the conditions which existed in Danville and what the association has done:

"Danville presents a multiplicity of trades; men who have given up other business adventures have entered the motor car business as means of earning a livelihood. To a few the returns have been small, due to many causes. The most potent cause lies primarily in the fact that much business is done without due consideration of the profit and that much is lost by reason of price-cutting and other selfish means of competition.

"Feeling that to obtain self-protection and at least a certain amount of success an organization of most of the various garage owners was necessary, the first step was taken during the past winter and consisted principally of sounding the various owners. The so-called large dealers, the ones with the most extensive investment in their business, at first furnished some opposition; their question was, 'What is to be gained?'

"The smaller ones were in favor of the protective movement and readily entertained the idea of some sort of organization.

Got Money in Advance.

"After one or two poorly-attended meetings it became apparent that our attempted organization would be futile unless the 'get-together' idea could be made more interesting. Accordingly a committee of five persons waited upon and invited each garage owner in our city to a 'dutch lunch.' **To insure attendance the expense was collected in advance.**

"This convention proved most successful, several enthusiastic talks were given, and then the primary subject was brought up, viz., 'What an organization can do for a garage owner.' It was decided that a successful business and mutual protection was possible only through the influence of organization. Officers were elected, the work outlined, and we adjourned with the most gratifying feeling that the other man wasn't such a bad fellow after all.

"Many important questions have been up for discussion and solution. Heretofore gasolene had been sold on the street at cost price, no matter what the quantity sold. Oil was peddled around in five-gallon lots; this also at cost. A committee of five was appointed by our president, who took the matter up with the oil companies, and as a result no cars are filled on the streets and the peddling of oil in small quantities has been stopped.

"The eyes of some of the members of the organization were opened to the possibilities that could be brought about in the tire situation. We found that consumers were in receipt of price lists from the dealers in some of the best-known and highest-priced cars, in which lists tires were offered for sale at manufacturers' cost. The practice was stopped through the efforts of the state association. The margin in tires being small, every dealer promised to stick to the price list of the standard-made tires. We have instituted a minimum scale of repair work which is in force at all garage repair-shops and is working out well.

After the Curbstone Dealer.

"We are now endeavoring to eliminate the curbstone car dealer, who has no overhead expense and no fixed permanent place of business. There is only one motor car factory that is giving us any degree of trouble regarding this matter. They not only sell their cars at cost but I understand dispose of tires at manufacturers' prices. This matter we are taking up through the state organization.

"I was talking to a dealer in a small town and he told me it was practically impossible for him to carry any line of accessories on account of the mail order business. This is a very hard thing to eliminate, but I believe in a short time we will be able to handle it through the state association. Local garages without the protection of organization will soon be mere history, but by cooperation they can be a great deal of benefit not only in a business way to themselves but to the public in general by bringing to the people local advantages.

Now Boosting Home Trading.

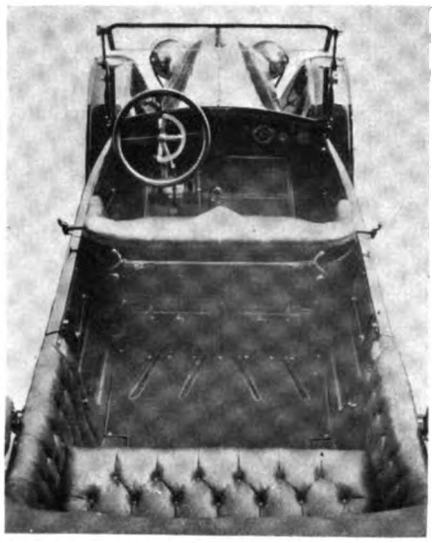
"We are now conducting a campaign through the local newspapers with the object of interesting the people in the surrounding territory of the importance of trading at home.

"We have found it beneficial and convenient to keep our garages open at night."

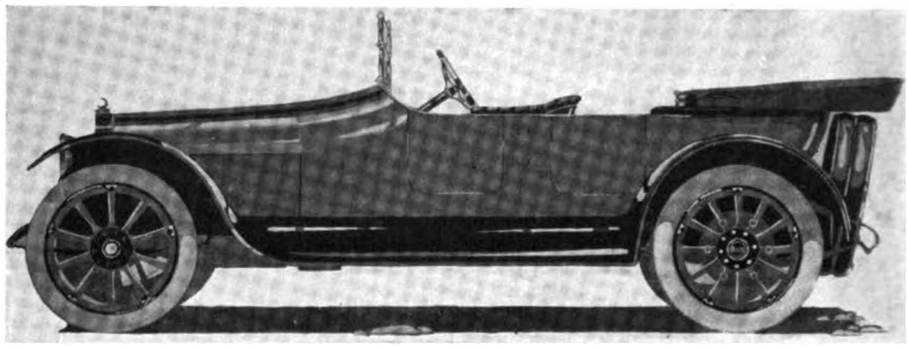
The officers of the organization are: Burt Jones, president; Harry Linne, vice-president; E. W. Seawright, secretary; Will Holmes, treasurer, and Archie Hoffman, chairman; Stanley Snyder, Henry H. Gast, E. B. Collins, directors.

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Continental Motors in New Moon Models



THE NEW MOONS HAVE WIDE SEATS



NEW MOON LIGHT SIX WHICH SELLS FOR $1,575; IT IS EQUIPPED WITH A BLOCK CAST CONTINENTAL MOTOR

Four at $1,350 and Six at $1,575 Supplement Older Six Which is Much Improved—Left Drive in All

Two new streamline cars, the 6-40 and the 4-38, together with the improved 6-50, comprise the 1915 line of the Moon Motor Car Co., St. Louis, Mo. The 6-50, with a new type of body, can hardly be recognized as a carried-over model, and the mechanical improvements incorporated are enough to warrant the car being called a new one. The 1915 season marks the passing of the Moon-made motors and all three cars are now equipped with Continental engines. In 1914 the four-cylinder car marketed was the only one with a Moon engine, and with the bringing out of the two new cars Continental motors are being used exclusively.

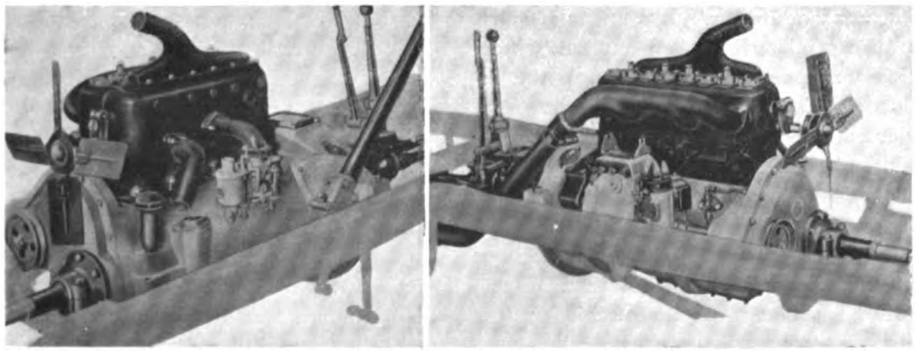
The new four sells for $1,350, the new light six at $1,575, and the improved 6-50 at $2,250, which is the same as that asked for the 1914 model of that car.

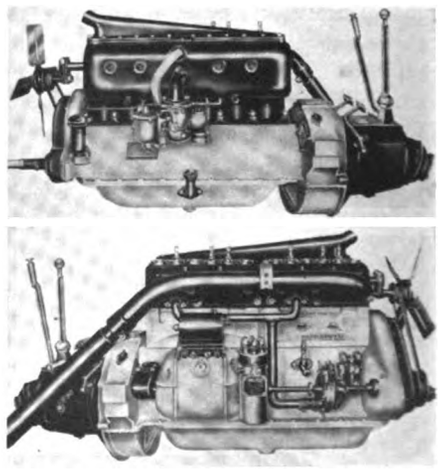
The new four and new six are equipped with roadster and five-passenger bodies only at the price mentioned, while the 6-50 comes through with either roadster, four-, six- and seven-passenger bodies.

The changes in the 6-50 are important ones. The wheelbase has been decreased from 134 to 130 inches, the doors widened from 21 to 22 inches, the rear seat upholstery has been made deeper, more leg room has been provided for the drive and the tonneau extra seats improved upon. The disk clutch has been reconstructed and the method of holding the plates changed so that wear is reduced. It is stated by the Moon company that 150 pounds has been removed from the rear axle, due principally to the adoption of a crucible steel housing instead of the malleable iron one used in the 1914 car. The brake drums on the rear wheels have been increased from 14 to 16 inches in diameter, the silent chain drive of the Delco distributor adopted and a new braking system installed. A Klaxon horn and Stewart-Warner vacuum feed are two additions to the equipment.

The 4-38 and the 6-40 are entirely new cars for this season and are somewhat similar in construction and in the general outside appearance. The four has a bore and stroke of 3¾ x 5 inches, with L-head cylinders cast in a block. It is stated that this engine shows 44 horsepower at 2,200 r. p. m. An improved one-wire Delco starting, lighting and ignition system is used and an added feature this year is the Stewart-Warner vacuum feed by which the carburetter is fed by gravity even though the fuel tank is located in the rear of the chassis.

The engine drive is taken by a dry disk clutch and then by a three-speed selective gearset, both of these members with the motor forming a unit power plant. Both clutch and gearset are products of the Warner Gear Co., Muncie, Ind. The propulsion of this, as well as the new six, is by the Hotchkiss drive, which eliminates the torque rod, simplifies the chassis and makes the springs take the driving strains. The Moon company has adopted a new type of braking system in all of its 1915 cars, the system having been designed by Engineer H. L. Goodspeed, who has reduced the number of system parts from 50 to 22. In the 1914 cars an equalizer system was in use which required a long equalizing



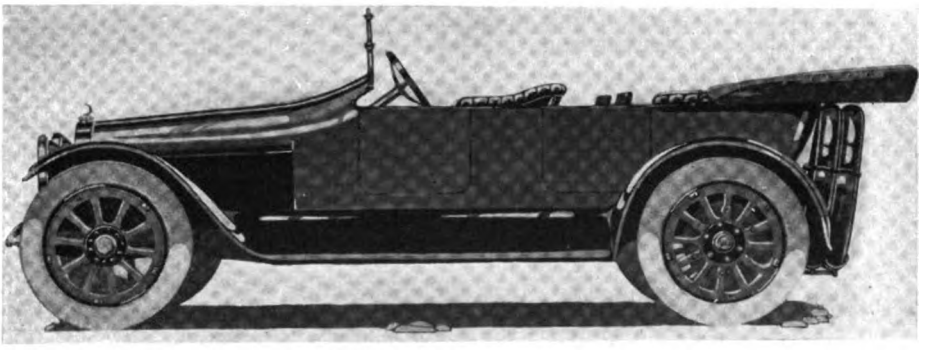


BOTH SIDES OF NEW FOUR AND SIX-CYLINDER MOTORS, SHOWING CLEAN, COMPACT DESIGN

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beam at about the center of the chassis. In the new system a more direct action from pedal to brake bands is obtained with the equalizing beam in the rear almost above the rear axle housing. Brake adjustment is easier and danger of binding from lack of lubrication is eliminated.

The 4-38 has a wheelbase of 120 inches and has underslung rear springs which so lower the body as to give it a decidedly smart appearance. This body, as well as those of the other Moon cars, is of the true streamlike type with a graceful curve from the windshield base to the radiator. The latter is a new one with a slightly rounded front. The driver's compartment affords about 44 inches of leg room and the tonneau is also comparatively roomy. Concealed hinges and locks, clean runningboards, crowned fenders, and other features in



LARGER MOON SIX WHICH HAS AN L-HEAD MOTOR 3.75 BY 5.25 INCHES

longer wheelbase, greater power and light weight supplies the demand for a car midway between a four and a heavier six. The Continental motor in this machine also is of L-head construction, with cylinders cast in block and with a bore and stroke of 3½ x 5 inches.

SPECIFICATIONS OF THE THREE MOON MODELS FOR 1915

Model	Big Six	Light Six	Four
Price	$2,250	$1,575	$1,350
Make of motor	Continental	Continental	Continental
Number of cylinders	Six	Six	Four
Shape	L-Head	L-Head	L-Head
How cast	Threes	Block	Block
Bore	3¾	3½	3¾
Stroke	5¼	5	5
S. A. E. rating	33.75	29.4	33.75
Ignition	Delco	Delco	Delco
Carburetter	Rayfield	Rayfield	Rayfield
Starting-lighting	Delco	Delco	Delco
Gearset	———	3-speed	———
Clutch	Multiple disk	Multiple disk	Multiple disk
Wheelbase	130	120	120
Tires	35 x 4½	34 x 4	34 x 4
Wheels	Wood	Wood	Wood
Steering	Left	Left	Left
Control	Center	Center	Center
Make of axles	Moon	Moon	Moon
Type of rear axle	Floating	Floating	Floating

Equipment: Top, windshield, speedometer, electric lighting and starting system, tools, etc.

demand are to be seen on the new Moon.

Drive is left, with control levers in the center, with the instruments cleverly grouped on the cowlboard. The headlights afford illumination for country and city driving and the dimmer control is operated from the dash.

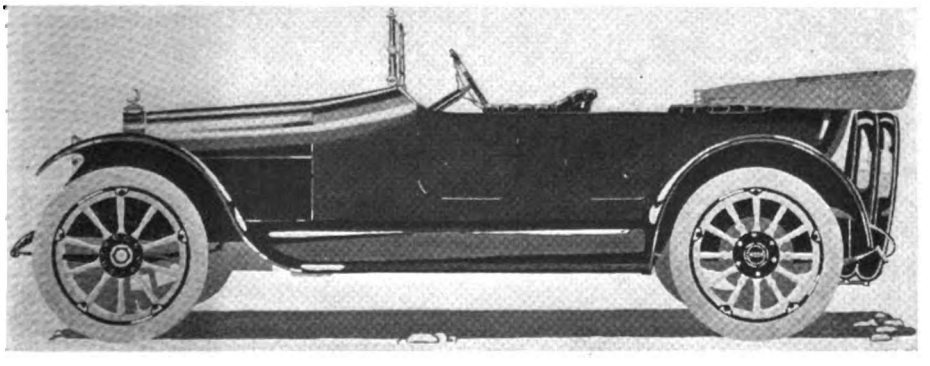
The new Moon six reflects many of the features of the new four, but with its

The clutch and gearset, in unit with the motor, are of similar design to those used in the four, but the parts are slightly heavier to care for the greater strains. The drive from the three-speed gearset to the floating rear axle is shaft and bevel gearing. The new brake equalizing system described in a previous paragraph is a feature of this car also. The springs are underslung and the drive is taken through them as in the four, eliminating all the usual driving members. In order to obtain a short turning radius the frame has been narrowed in front.

The new rounded radiator, Stewart-Warner feed, roomy body and Delco cranking, lighting and ignition system, are features on the 6-40 Moon. The streamline body is somewhat on the same order as that used on the four, as may be gained from the illustration given herewith. Drive is left, with control in the center, and the cowl arrangement, carrying of the extra tires in the rear and the general interior body arrangement is the same as in the four. The wheelbase is 120 inches and the tires 34 x 4 inches.

The carried-over model, the 6-50, has the same engine as used in the 1914 model, with improvements in detail and the equipment necessary to bring it up to date. The cylinders have a bore and stroke of 3¾ x 5¼ inches and are cast in blocks of three. The Delco system of improved design has been installed and the circuit breaker of last year retained. With this breaker it is possible to tell whether there is an open or short circuit in the system. The battery for this system is an Exide and is placed behind the apron near the front right fender. Circulating splash oiling is used and cooling is by centrifugal pump.

The new type of disk clutch has been placed in this chassis, but the gearset of last year, a four-speed affair, has been retained without changes. The floating rear axle and Moon one-piece rear axle housing are as before with the exception of a reduction in weight. The springs of this car are overhung and the drive is by torque members as in the 1914 model. The new type of brake equalizing system is used on this model. A rear axle feature is the centrifugal oil-draining device inside the hubs. This device gathers oil likely to make its way from the differential housing to the brake drums.



THE NEW MOON FOUR HAS THE SWEEPING LINES OF THE SIX; IT SELLS FOR $1,350 COMPLETELY EQUIPPED

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RECENT DEVELOPMENTS in ACCESSORIES

Goodrich Collapsible Bucket.

There are times when a bucket of some sort is a necessity on a car. The ordinary pail is out of the question because of the space it occupies, so collapsible buckets have come into use. Some of these have the disadvantage that they will not stand upright when filled with water.

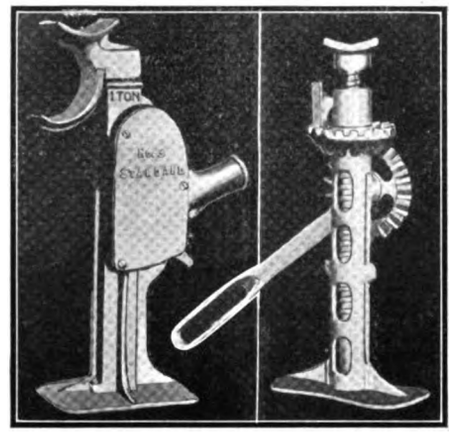
The Goodrich bucket, made by the B. F. Goodrich Co., Akron, O., is so constructed that it will stand up when filled without danger of collapsing. This eliminates the necessity for the user acting as a peg to hang the bucket on until he empties it. The capacity is 2½ gallons. There is a spout with a strainer which makes the operation of filling a hot radiator comparatively easy. There are no springs or metal parts that can rust. When folded the bucket is little more than one-half inch thick.

Standard Jacks in Many Sizes.

The Standard line of jacks made by the National-Standard Co., Niles, Mich., includes types made for several lifting capacities and purposes, the lift being either by ratchet mechanism or by screw arrangement. The latest type to be placed on the market is the Standard tire saver and garage jack, which is made primarily for quick action, and is preferrably sold in sets of four, so that the car may be completely lifted from the floor at its four corners.

The new National jack is made of malleable castings and the foot of the frame is of generous proportions to give needed support against tipping over. The lifting bar is enclosed and cannot fall apart when moved. Another point is that the teeth are placed close together, permitting of a wide range of action. The top of the lifting bar is swiveled, allowing for its being turned to any desired position. The jack may be readily adjusted to fit any size wheel from 30 to 42 inches in diameter. The price for a set of four is $5.50.

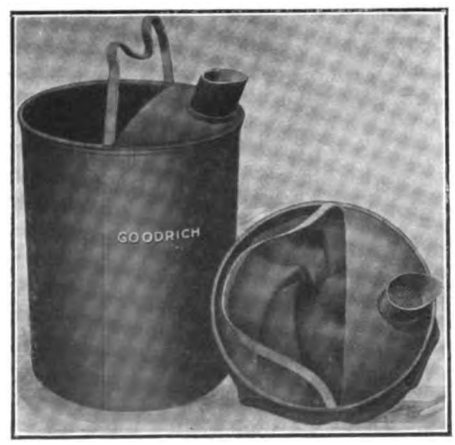
The other jacks of Standard make range in lifting capacity from 1,500 to 2,000 pounds and are thus adaptable to any car. The No. 1 Standard is a one-ton jack of the enclosed ratchet type and has a height with bar down of 11½ inches. With the lifting bar raised this dimension is 18 inches. It weighs 9½ pounds and lists at $4. This is suitable for the heaviest cars. The Baby Standard at $3 lifts 1,500 pounds, weighs 6½ pounds and has a height with the bar down of 10½ inches.



STANDARD NATIONAL JACK AND NEW TIRE SAVER



TRAFILOG OIL BOX KEEPS SPRING LEAVES LUBRICATED



GOODRICH COLLAPSIBLE BUCKET WILL STAND UP WHEN FULL

For use with Fords or other light cars a screw-type jack has been added to the line. This jack, selling at $1, weighs 4 pounds and has a 6-inch lift.

The National company also makes a metal handle for jacks where it is necessary to lift large, heavy cars. These serve a double purpose, as they have a tire removing tool on one end. The length of these handles is regularly 15 inches, but for use with cars having a considerable overhang at the rear axle they may be had 18 inches in length.

Trafilog Spring Lubricator.

Not a few manufacturers recognize the fact that leaf springs require lubrication as much as almost any other moving parts and have devised means for supplying oil. Among the most recent of these is the spring oiler manufactured by the Brown Trafilog Co., Cleveland, O., which is shown in the accompanying illustration.

The lubricators are bolted to the springs just inside the rebound clips; each contains two heavy pads of felt which retain oil and feed it between the leaves as it is required. The movement of the leaves upon each other spreads the oil.

The only tool required to attach the lubricator is a screwdriver, and after installation no attention is required except occasional filling with oil through the openings provided for the purpose. The oilers cost $1 each; most cars require ten, while a Ford needs but four.

Cyclecars At the National Shows?

Cyclecars likely will be exhibited, together with their full fledged brothers, at the forthcoming national automobile shows which are to be held in New York, January 2 to 9, and in Chicago January 22 to 29. The secretary of the Cyclecar Manufacturers' National Association has requested that General Manager S. A. Miles set aside a certain space to be devoted to the exhibition of cyclecars and, provided a sufficient number of manufacturers agree to exhibit models, the request will be granted.

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In Salesroom and Garage

The West End Garage Co. has been organized and has built a new garage and repair-shop at 3178 Wilkens avenue, Baltimore, Md., the main thoroughfare on the boulevard between Baltimore and Washington. It is under the management of Thomas A. Pietsch, an expert mechanic. Supplies are stocked and the garage will remain open nights for the accommodation of tourists between the two cities.

F. E. Pryor and H. H. Cullen, Austin, Tex., and C. F. Gydeson, Houston, Tex., have secured the Cadillac agency for Austin and surrounding territory. A salesroom, repair-shop and service station have been established at East 5th and San Jacinto streets.

J. Doyle, for six years manager of the Detroit branch of the Ford Motor Co. and at present distributer of the Saxon in the state of Michigan, has been made Detroit distributer for Dodge Bros. His salesrooms will be at Jefferson avenue and Brush street.

A four-story fireproof building will be erected by L. F. Schoelkopf, Ford dealer in Madison, Wis. He will build on East Washington avenue. His garage, now located at 116 South Pinckney street, will be moved to the new building upon its completion.

The Paige-Toledo Co., Toledo, O., which has been organized by C. L. Sturtevant, Fred Hofer and H. D. Davis, to handle the Paige, has opened showrooms at 1002 Madison avenue and a service station at 307 and 309 Tenth street.

W. Murray Graham has purchased the entire stock of the Capital City Auto Co., Austin, Tex., from Wilborn Hudson. The new owner will remove to larger quarters and carry an increased stock of motor cars, accessories and supplies.

C. E. Coyette has purchased the interest of B. A. Snow in the Southern Arizona Motor Co., Tucson. The company, which has the agency for Buick cars, hereafter will be known as the Tucson Buick Sales Co.

The Kansas City, Mo., branch of the Imperial Automobile Co., which for several seasons past has been located with the Bradley-Alderson Co. at Tenth and Hickory streets, has been moved to 1804 Grand avenue.

A garage and repair-shop, 40 x 60 feet, is in course of erection at North State and East Erie streets, Painesville, O. Jack La Fournier, formerly of the Vulcan Mfg. Co., will be the proprietor.

John J. Miller has sold his interest in the West Market Street Garage, Bluffton, Ind., to his partner, Hugh Dustman. He will enter the trade on his own account on East Washington street.

The Omaha Overland Co. has taken the Nebraska agency for Willys-Overland cars. J. R. Jamison is president and manager of the new company, which is located at 2101 Farnam street.

P. R. Briggs and Howard Zahn have entered the trade at Jacksonville, Ill. They have the agency for Buick cars and have leased a new building at Pine street and Lafayette avenue.

J. Crick and B. E. Tiernan have formed the Perfex Sales Co. and located at 1148 South Olive street, Los Angeles, Cal. The Perfex delivery car will be handled exclusively.

The M. & F. Sales Co., 422 Jefferson street, Milwaukee, Wis., Packard dealer, has purchased the Consumers' Tire Co., 701 Wells street, and moved to the Consumers' location.

The Union Auto & Supply Co., Union, Ia., has been sold to I. V. Allen and L. F. Spurlin, who will operate a service station under the partnership name of Allen & Spurlin.

John Doran has purchased two lots at International Falls, Minn., on which he will erect a garage, 50 x 75 feet. A machine-shop and repair department will be included.

The Chalmers Motor Sales Co. has been organized in Fort Worth, Tex., by G. C. Tippins and S. C. Creech, with salesrooms at 510 Throckmorton street.

W. E. Rank and E. H. Boyd, Waupun, Wis., have purchased the garage of W. S. Whiting & Son. They in turn have leased the place to Grosbeck & Blazer.

Irving Richey has let contract for a four-story garage building on George street, New Haven, Conn. The estimated cost is $40,000.

Thomas J. Harris has bought out his partner, Orrie E. Starr, in the Knight Rubber Co., 810 Madison avenue, Toledo, O.

Dodge Bros., Detroit, have appointed E. P. Clarkson as their district representative in the territory about Toronto, Ont.

Theodore Decot has let contracts for the erection of a garage and repair-shop, 44 x 86 feet, in Sauk City, Wis.

John Meiklejohn has purchased the interest of L. J. Butts in the Ford Garage, Waupun, Wis.

A garage has been opened by Gary & Adock on West Jackson street, Macomb, Ill.

The Electric Garage has opened at 2307 Church street, Galveston, Tex. E. Young Bros. are erecting a garage on Main street, Clarksburg, W. Va.

MOTOR CAR AGENCIES RECENTLY ESTABLISHED

Place	Car	Dealer
Auline, Kan.	Maxwell	Auline Auto Co.
Bowling Green, Ind.	Maxwell	K. K. Frump
Burton, Tex.	Maxwell	Chas. Kasten
Centerville, Ind.	Maxwell	Jos. M. Zea
Cerro Gordo, Ill.	Maxwell	C. W. Adams & Co.
Danbury, Neb.	Maxwell	J. W. Nutt
Florence, Ala.	Maxwell	McRae Motor Car Co.
Hailey, Idaho	Maxwell	Hailey Garage Co.
Heppner, Ore.	Maxwell	N. E. Winnard
Russellville, Ala.	Maxwell	Chas. H. Wilson
Shoshone, Idaho	Maxwell	Helman & Helman
South Bend, Wash.	Maxwell	Soule & Round
Barbourville, Ky.	Ford	W. H. McDonald
Binghamton, N. Y.	Chandler	Binghamton Motor Car Co.
Boston, Mass.	Mitchell	F. H. Luca.
Canal Dover, O.	Chandler	The Dover Automobile Co.
Columbus, O.	Paige	Central Auto Vehicle Co
Columbus, O.	Krit	The Cummins Auto Sales Co.
Columbus, O.	Winton	E. J. Thornton
Columbus, O.	Allen	The Snyder Automobile Co.
Columbus, O.	Hudson	Standard Motor Car Co.
Columbus, O.	Empire	S. W. Schott
Denver, Col.	Chalmers	Western Motor Car
Detroit, Mich.	Briscoe	The Eininger-McHugh Co., Inc.
Detroit, Mich.	King	The Monarch Hardware Co.
Evansville, Ind.	Ford	Korb & Co.
Lansing, Mich.	Priscoe	A. W. Brown & H. L. Brown
Lexington, Ky.	Ford	Commercial Auto Co.
Los Angeles, Cal.	Car Nation	Herbert T. Brown
Los Angeles, Cal.	Premier	Smith Brothers
Minneapolis, Minn.	Oldsmobile	John E. Fawkes
Nashville, Tenn.	Ford	Hartsfield Auto Co.
Nashville, Tenn.	Mitchell	Burton Auto Co.
Newark, O.	Saxon	Warren S. Welant, Jr.
Port Huron, Mich.	Buick	George E. Yokum
San Francisco, Cal.	Hupmobile	Linz-Sanborn Motor Co.
Spokane, Wash.	Losier	Moylan-Reilly Auto Co.
Toledo, O.	Mitchell	H. E. Throne
Washington, D. C.	Mitchell	Mitchell Sales Co.
Washington, D. C.	Metz	Cartercar Sales Co.
Washington, D. C.	Reo	Smith-Trew Motor Co.

COMMERCIAL

Place	Car	Dealer
Bergen, N. Y.	Koehler	Geo. E. Parish
Gadsden, Ala.	Koehler	Etowah Warehouse Co.
Honea Path, S. C.	Koehler	McKenzie & Monroe
Montgomery, Ala.	Koehler	Patterson & Ingalls
Wooster, O.	Kochler	Rice & Wacker

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Advanced Maintenance

REPAIRING THE DAMAGED FENDER

(Continued from last week.)

By George Fernwell

Commencing with the runningboard iron, methods of straightening this may vary according to whether the body is on or off and the expediency of removing the runningboard or otherwise.

Fig. 1 indicates a very effective method of straightening a runningboard iron which has been bent upward from its normal level. The tools required are two jacks and a piece of straight lumber long enough to extend to a beam or girder at the ceiling of the work-shop. Applying a jack to the runningboard iron at a with sufficient pressure to wedge the jack tightly between the bracket at a and the floor, a second jack is mounted on a wood block at b to prevent breaking the runningboard.

Between the jack and ceiling beam or girder a piece of straight lumber is cut to a suitable length and placed into position as shown. The operation of the jack will effectively bend the raised portion of the bracket down to its proper level. To allow for recoil of the bracket after removing the pressure of the jack it will be necessary to spring the straight portion of the bracket somewhat lower while under pressure than its normal level.

In carrying out this repair it is best to have as level a floor as possible and to see that all four of the tires are properly inflated. With the chassis completly stripped of the body, runningboard, splash guards, etc., there will be no difficulty in applying an ordinary 24-inch iron square so as to determine when the runningboard is at right angles with the perpendicular face of the side member of the frame of the chassis.

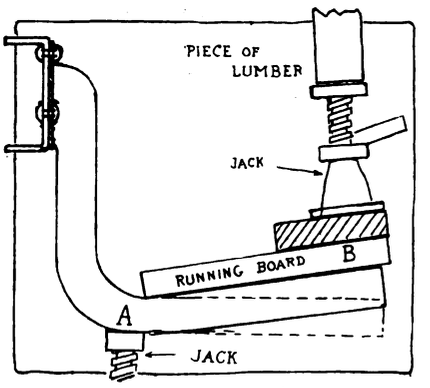


Fig. 1—Two jacks, placed as indicated, can be used quite effectively to straighten a bent runningboard iron.

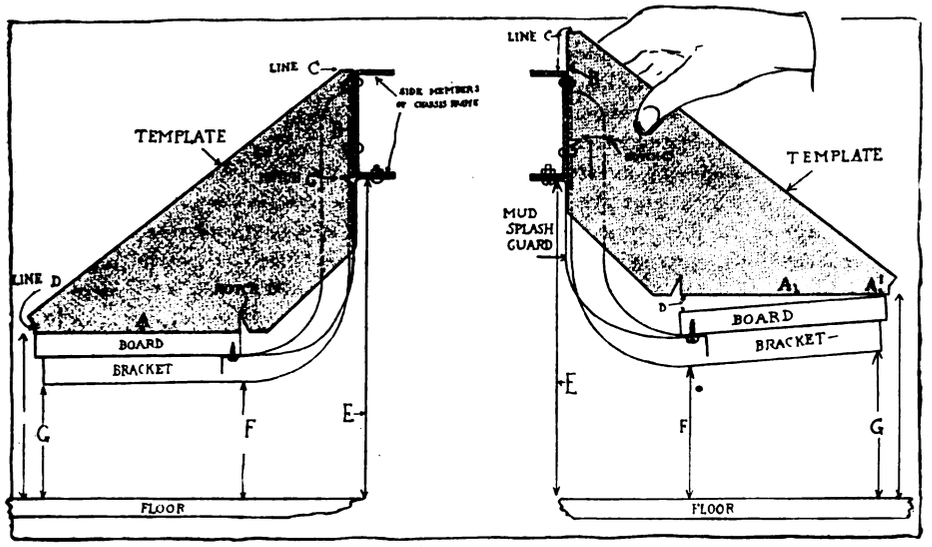


Fig. 2, left—Template, made from a piece of waste steel, as it appears when applied to a runningboard that has not been bent out of shape. Fig. 3, right—Application of the same template to a runningboard in which the irons have been bent.

With the body on and splash guards in place it is very inconvenient and usually impossible to apply a square.

With the mud splash guards removed from the chassis and runningboard an ordinary 24-inch carpenter's square can be applied to the runningboard and to the perpendicular face of the side member of the chassis frame to determine whether the runningboard is or is not at right angles to the face of the frame. Also the graduations on the square may be used in comparing the height of the frame above the runningboard on both the injured and uninjured side of the chassis.

A device which can be applied as a substitute for the square without the removal of the splash guards is shown in Figs. 2 and 3. It consists of a waste piece of sheet iron cut square at two adjacent edges with as much of the extreme corner of the right angle removed as may be found in the way.

Substitute for Steel Square.

A substitute for the graduations on the square even more convenient and unmistakable can be obtained by applying the sheet metal template to the uninjured runningboard and the frame and marking and cutting notches as clearly indicated in Fig. 2. As may be seen by referring to Fig. 2, the template is cut off along a line exactly level with the top of the frame. A notch is cut level with the bottom of the frame. A notch is also cut perpendicular with the inner edge of the runningboard, and a notch or line exactly even with the outer edge of the runningboard.

In Fig. 3 may be seen the method of

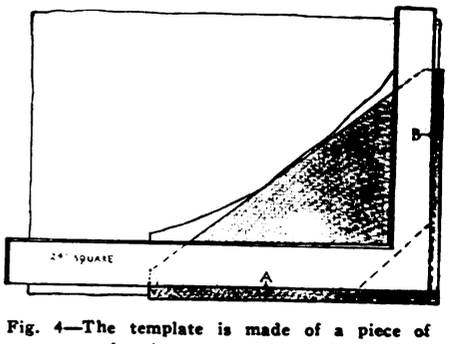


Fig. 4—The template is made of a piece of waste metal using an ordinary 24-inch steel square as indicated.

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application of the template to the damaged runningboard and bracket.

The most obvious thing indicated by the template in Fig. 3 is that upon pressing the edge B of the template firmly against the side of the frame with the lower right-hand corner A1 scarcely touching the edge of the runningboard, that the runningboard bracket must be bent down until when reapplying the template subsequently the line C or the notch C1 coincide with the top and bottom of the frame as in Fig. 2.

Determining Deformation.

A more difficult thing to determine is the exact point or section of the curved portion of the bracket at which the latter is deformed or bent out of shape. As a preliminary to ascertaining this with any degree of exactness, measurements must be taken under both sides of the chassis frame as indicated by the lines E, Fig. 2, and E, Fig. 3; that is, from the underside of the chassis frame to the floor. If these measurements should prove approximately equal upon both sides of the frame it would help to greatly simplify the problem. If they are not equal, and the cause is not to be found in unevenly inflated tires, it would be worth while jacking up the lower side members of the frame until the dimensions E, Fig. 2, and E, Fig. 3, are about equal.

Assuming E, Fig. 2, and E, Fig. 3, to be equal, the measurement F, Fig. 2, should be taken and compared with the measurement F, Fig. 3. If there is very little variation noted there, it may safely be assumed that the point at which the bracket is deformed from its original contour is located very closely to the inner edge of the runningboard. Therefore, in the above instance the application of the two jacks to the work of adjusting the bracket illustrated in Fig. 1 should be carried out with the lower jack supporting the deformed bracket perpendicularly in line with the inner edge of the runningboard.

Care Needed for Exactness.

It may sometimes be found that the runningboard on the uninjured side of the chassis, while not noticeably out of place, may vary considerably from the right angle which it should form in theory with the perpendicular face of the chassis. If this should be the case, the runningboard on the uninjured side of the car would form a rather confusing guide to the proper readjustment of the deformed bracket on the injured side.

Therefore it would be better to spend the little time and labor necessary so as to adjust the runningboard bracket on the assumed uninjured side of the chassis until it is practically square with the chassis frame. Obviously the preliminary work suggested should be done before marking and cutting the notches and lines indicated on the template, Fig. 2.

The template, which has been described in its application in the foregoing, must not be relied upon absolutely as a guide to insure that when the work is finished the two runningboards will be practically level or parellel with the floor. There may be slight deviations from true perpendicular at the face of the chassis frame, therefore the template must be used with judgment and the results of its use checked off by the measurements F and G, Fig. 2 and Fig. 3. Assuming the floor of the workshop to be fairly level and the two side members of the chassis frame an equal height from the floor, the measurements, F and G, should closely correspond with each other when the work is finished.

(To be continued.)

Cancel Fire Policies in Milwaukee.

That insurance companies are making a close investigation of every motor car risk on fire, theft and liability policies to determine the character and habits of the insured has been discovered in Milwaukee through the excitement incident to the cancellation of many policy contracts during the last two weeks.

Insurance agents are reticent concerning the matter, as many of them are required to act as special investigators and make reports, which later are verified by special agents of the companies, so that no unscrupulous agent will pass undesirable risks.

In past years is has been the custom to accept as many risks as could be procured, but severe losses due to incendiarism and carelessness have awakened the insurance companies to the seriousness of the situation and no policy is now kept in force unless the habits and general character of the policyholder meet with the requirements of the company.

Hoosier Fair Has Car Contest.

The Hoosier Motor Club, of Indianapolis, Ind., is working out plans for a county motor car contest which it will conduct as a feature of the state fair, the contest to be held Wednesday, September 9. W. S. Gilbreath, secretary of the club, is enlisting the garage managers in the county seats of the state.

As an incentive to car owners in each county to organize in delegations for the contest, the state board of agriculture offers three prizes—$100 to the county sending the largest number of cars in one delegation, $50 to the county sending the second largest number, and a third prize of $25 will be awarded the owner who has the best decorated car.

Each county contesting will be required to organize by electing a marshal, who will head its delegation, and to this official Gibreath will later send directions for moving the procession of cars to the fair ground and the arrangements to be carried out after the arrival at the exposition. Marion county, including Indianapolis, is barred from the contest. There is a movement on foot for a permanent motor car exhibition building at the fair grounds.

Auto-Lite System on the Overland.

Due to the presence of a Westinghouse ammeter upon the new Overland models, it was erroneously stated in the description which appeared last week that Westinghouse lighting and starting equipment is used; this should have been Autolite. The steering gear instead of being an adjustable worm and nut is an adjustable full gear and worm. Slight changes have been made in the prices of two of the models, the roadster having been reduced from $1,075 to $1,050 and the coupe increased from $1,550 to $1,600; the touring car remains $1,075.

Koehler Truck Is One-Ton Capacity.

The Koehler truck, which is produced by the H. J. Koehler S. G. Co., New York, is of one ton capacity and not 1,600 pounds as inadvertently was stated in the description which appeared in last week's issue; similarly both front and rear wheels are 36 inches in diameter, the tire equipment being 2½-inch Firestone solids both front and rear. The wheelbase of the standard model was given as 86 inches; it is 90 inches.

Five Adopt Westinghouse Apparatus.

Five more companies have adopted the Westinghouse electric lighting, starting and ignition systems for 1915 models. These are the Vulcan Mfg. Co., Painesville, O.; McFarlan Motor Car Co., Connersville, Ind.; Speedwell Motor Car Co., Dayton, O.; Briggs-Detroiter Co., Detroit, Mich., and the Stewart Motor Corporation, Buffalo, N. Y. The Kissel Motor Car Co., Hartford, Wis., will use Westinghouse ignition and lighting.

Robie Invades Foreign Field.

P. Parker Drake, of London, Eng., has formed the Robie Motor Cars, Ltd., of England. He has contracted for 565 light cars made by the Robie Motor Car Co., of Detroit.

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The Week's Incorporations

Hartford, Conn.—Allen Bros. Garage; capital $50,000.

Philadelphia, Pa.—Interstate Sales Co., under Delaware laws; capital $23,000; general motor vehicle business.

Covington, Ky.—Kenton Motors Co.; capital $10,000. Corporators—E. J. Rouse, L. E. Booth and M. R. Etheredge.

Houston, Tex.—Emmert Machine & Auto Co.; capital $5,000. Corporators—Gus Emmert, Emil Emmert and C. G. Watson.

Boston, Mass.—Bostonia Motor Mfg. Co.; capital $200,000. Corporators—Harry L. Simons, Malden; Samuel Weiss, Brookline.

Wilmington, N. C.—Lassiter-McDuffie Co.; capital $25,000. Corporators—Clyde Lassiter, Neal O. McDuffie and Edwin T. Burton.

Detroit, Mich.—General Garage Co.; capital $5,000. Corporators—Frank and Florence B. Boydell, John G. and Bessie N. B. Wood.

Columbia, S. C.—Cheraw Motor Co.; capital $5,000; to deal in motor cars. Corporators—Henlon B. and R. B. May and P. A. Murray, Jr.

Columbus, O.—Capital Motor Car Co.; capital $10,000; general motor vehicle business. Corporators—Ira Madden, R. P. Atkinson and C. A. Yes.

New Orleans, La.—Eureka Water Motor Co.; capital $10,000; to manufacture motors. Corporators—J. B. Rochelle, E. J. Ernst and N. B. Ernst.

San Francisco, Cal.—Grand Pacific Garage Co.; capital $20,000; to operate a garage. Corporators—J. S. Adler, D. S. Cohn, J. J. Marx and H. Marx.

Nashville, Tenn.—Union Motor Co.; capital $15,000; general motor vehicle business. Corporators—E. Fisher Coles, Harding E. Jackson, R. C Jones, Albert A. S. Britt and R. B. C. Howell.

Chicago, Ill.—Dashiell Motor Co.; capital $25,000; to manufacture motor cars. Corporators—C. R. Dashiell, Emil C. Wetten and Charles H. Pegler.

Anderson, Ind.—Simplex Sales Co.; capital $12,000; to deal in motor cars. Corporators—William H. Nelson, Eldred H. Wilford and Hattie A. Wheelock.

Enid, Okla.—Oklahoma Auto Bus Co.; capital stock $1,000. Corporators—F. J. Gentry, Pond Creek; C. E. Pendleton and L. G. Pendleton, both of Enid.

Detroit, Mich.—K. C. B. Co.; capital $200,000; to manufacture a carburetter for heavy fuel. Corporators—J. H. Chambers, C. H. Bennett and A. A. Leslie.

Evansville, Ind.—Bennighof-Nolan Co.; capital $100,000; to deal in motor car supplies. Corporators—Henry P. Bennighof, John J. Nolan and Val F. Nolan.

Columbus, O.—Ogden Fibre, Gear & Tire Co.; capital $1,000; to manufacture and sell motor parts. Corporators—D. Ogden, E. Ogden and Hubert S. Ogden.

New York, N. Y.—Steel Pneumatic Tube & Tire Co.; capital $200,000. Corporators—John S. Heep, Frederick Fuller and Charles O. Roth, all of 40 Wall street.

South Orange, N. J.—Robinson Seits Tire Co.; capital $5,000; motor car tires. Corporators—G. W. Robinson, A. M. Seitz and Frank Robinson, all of South Orange.

Batavia, N. Y.—Killeen-Green Co.; capital $4,000; garage and motor car business. Corporators—Paul J. Killeen, Josie E. Killeen and Paul M. Green, all of Batavia.

Dunkirk, N. Y.—Dunkirk Corporation; capital $30,000; to manufacture mufflers, motors, engines, etc. Corporators—E. Caldwell, E. K. Buttolph and R. J. Gross.

Roswell, N. M.—Roswell Auto Co.; capital $50,000; general motor vehicle business. Corporators—C. M. Farnsworth, C. C. Cagle and C. M. Sheperd, all of Roswell.

Passaic, N. J.—Passaic Auto Co.; capital $1,000; to deal in motor cars. Corporators—Chester R. Bates, M. K. Raymond and Chester L. Holloway, all of Passaic.

St. Joseph, Mo.—National Spring Wheel Co.; capital $100,000; to manufacture metal wheels for motor cars. Corporators—W. L. Mann, W. P. Justice and E. J. Kearby.

Chicago, Ill.—North Side Buick Sales Co.; capital $8,000; to deal in motor cars, accessories, etc. Corporators—Henry Weil, Herman J. Rosenberg and Harry J. Lurie.

Fort Wayne, Ind.—Co-operative Consumers' Co.; capital $15,000; to deal in motor car supplies. Corporators—Al. L. Jacobs, Ralph Wilpening and Robert R. Shuman.

Chicago, Ill.—Southern Illinois Motor & Lumber Co.; capital $25,000; general motor car and lumber business. Corporators—J. H. Ward, R. W. Eddleman and R. C. Eaton.

Chicago, Ill.—Service Motor Supply Co.; capital $5,000; to deal in motor cars. Corporators—Arthur J. J. Welsh, Gus C. Aucutt, Samuel H. Silverman and H. F. Walbaum.

Syracuse, N. Y.—Brewster Brothers; capital $1,000; to deal in motor cars. Corporators—Howard A. Brewster, Floyd L. Brewster and William D. Brewster, all of Syracuse.

Geneva, N. Y.—Seneca Motor Car Co.; capital $25,000; to deal in motor cars. Corporators—Alfred G. Lewis and George M. Chase, both of Geneva; Charles E. Hamilton, Rochester.

Lawrenceville, Mo.—Maxwell Motor Car Co.; capital $200,000; to manufacture, buy, sell and repair motor cars. Corporators—Andrew L. Maxwell, Casper L. Lewis and Niah M. Tehill.

Detroit, Mich.—Michigan Lubricator Co.; capital $200,000; to manufacture lubricators and other devices. Corporators—John B. Corliss, John B. Corliss, Jr., and Cullen D. Corliss.

Auburn, N. Y.—W. S. Curtis; capital $10,000; to conduct a garage and motor car business. Corporators—Winaford S. Curtis, Ray S. Messenger and Henry A. Ferguson, all of Auburn.

Winnipeg, Can.—Canadian Bull Tractor Co.; capital $1,000,000; to manufacture motor trucks. Corporators—W. H. McWilliams, A. R. Argraft, J. S. Loudon, W. J. Cummings, Roy M. Wolbin, Walter Pace, L. A. Cannon and H. F. Williams.

New York, N. Y.—Lee Tire & Rubber Co.; capital $20,000. Corporators—Harry E. Field, 440 Riverside Drive; John J. Watson, Jr., Brookville, L. I.; Albert A. Garthwaite, Conshohocken, Pa.

Dover, Del.—International Motor Clubs Association; capital $250,000; to furnish property protection to motorists. Corporators—C. H. Butler, M. M. Hirons and L. B. Phillips, all of Dover.

Chicago, Ill.—United Electric Car Owners' Garages; capital $50,000; to deal in motor cars, tires, etc., and operate garages. Corporators—Sylvester C. Abbott, Dwight S. Robb and E. P. Rumrill.

Boston, Mass.—Boston Sales Co.; capital $48,000; to manufacture and deal in motor car supplies. Corporators—Clarence P. Derby, Melrose; G. C. C. Shean, Boston; E. J. Sanderson, Cambridge.

New York, N. Y.—Ventre & Ostruk; capital $10,000; general motor car business. Corporators—Henri Ventre, 250 West 54th street; Paul Ostruk, 1296 Avenue A; Joseph Schlesinger, 424 East 54th street.

Philadelphia, Pa.—Interstate Sales Co.; capital $25,000; to manufacture and deal in motor cars, etc. Corporators—W. C. Arnold, Lansdowne; H. G. Lansinger, Philadelphia; J. M. Satterfield, Dover.

New Rochelle, N. Y.—C. B. A. Sales Co.; capital $3,000; general motor car and garage business. Corporators—Sidney H. Kent and William H. Schumacher, both of New Rochelle; M. J. Murphy, Brooklyn.

Dover, Del.—American Motor Utilities Co.; capital $500,000; to manufacture Compton pneumatic starters and automatic control devices. Corporators—J. McLaren, F. B. Knowlton and S. V. Dowling, all of New York city.

Changes in Capitalization.

Detroit, Mich.—Benham Mfg. Co., from $45,000 to $65,000.

Toledo, O.—Blevins Auto Sales Co., from $10,000 to $13,000.

Indianapolis, Ind.—Mais Motor Truck Co., from $1,000,000 to $200,000.

Indianapolis, Ind.—National Motor Vehicle Co., from $250,000 to $600,000.

Covington, Ky.—United States Motor Truck Co., from $250,000 to $300,000.

Coming Events

* Indicates sanction by A. A. A.

Aug. 21-22, Elgin, Ill.—Road races under the auspices of the Chicago Automobile Club.*

Aug. 27, Brooklands Track, England—Annual Automobile Race.

Aug., Denver, Col.—650-mile run, Colorado Springs to Salt Lake City.

Sept. 2-3-4, Milwaukee, Wis.—Economy Reliability run.

Sept. 2-7, Hartford, Conn.—Automobile show, Connecticut Fair Association.

Sept. 6, 7, 8, Newark, N. J.—Cyclecar Reliability Tour to Atlantic City.

Sept. 7, Brighton Beach, N. Y.—Track meet, New York Motor Dealers' Contest Association.

Sept. 7, Corona, Cal.—Road race, Corona Auto Association.

Sept. 7, Providence, R. I.—Track Racemeet under the auspices of F. E. Perkins.

Sept. 7-14, Indianapolis, Ind.—Automobile show, Indianapolis Automobile Trade Association.

Sept. 9-11, Cleveland, O.—Convention Paving Brick Manufacturers' Association.

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National SIX

ANNOUNCEMENT

Champion American Car

New Series

$2375

POSTAL TELEGRAPH – COMMERCIAL CABLES
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SEND the following Telegram, subject to the terms on back hereof, which are hereby agreed to.

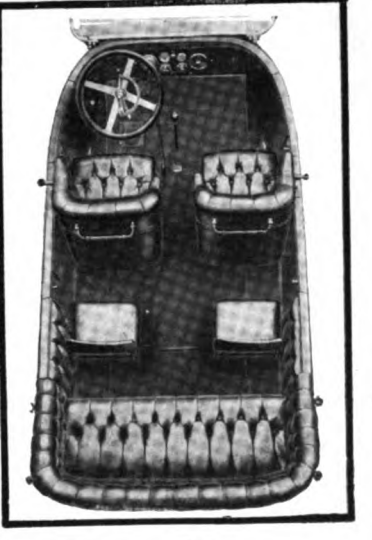
Motor World,
New York City.

Release announcement National New Series Six, as we are already to make deliveries. New series is another advancement - another chapter in National's history of quality designing. Characteristically National in beauty and smart outline. Our dealers have unanimously approved.

All the accumulated honor of National victories is represented- all the experience of fourteen years successful building is incorporated. In short National reputation so faithfully earned and carefully guarded is here concentrated and offered in this new Six. Please print pictures. Request dealers not to delay. We have a liberal offer.

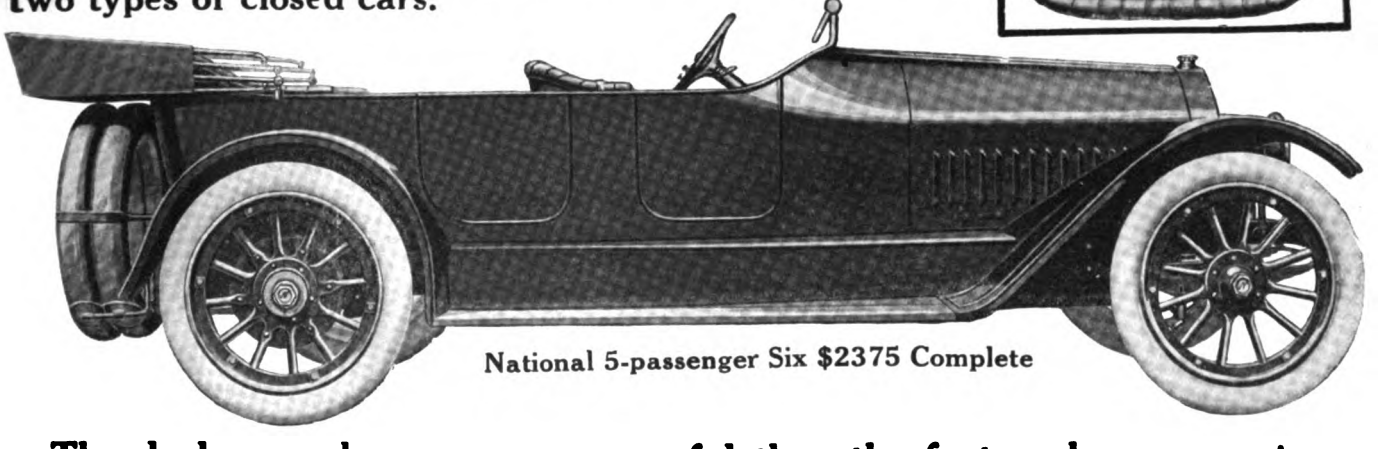
National Motor Vehicle Co.,
Indianapolis, Ind.

P.S. Our business for year ending July largest ever, even surpassing last years increase. Prospects still better now.



Interior of Six Passenger Six Cylinder–

The new series National cars are built in 2-4-5-6 passenger open bodies, also in two types of closed cars.



National 5-passenger Six $2375 Complete

The dealer can be no more successful than the factory he represents.

National Motor Vehicle Company, Indianapolis, Ind.

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Cheap Clothes When New May Imitate Good Ones, but They Soon Become Misfits

IMITATIONS ARE ALWAYS MISFITS

THE WILLARD LBA BATTERY

When You Buy a Car, Look on the Battery for the Trade-Mark

THE WILLARD LBA BATTERY

It proves that the Storage Battery is absolutely right and is a good indication that in the other parts of the car there are no misfits.

Appearances are deceiving. Other Batteries have been made to look like the LBA Don't judge by appearance.

Insist on Seeing the LBA Trade-Mark

WILLARD STORAGE BATTERY CO.

Cleveland, Ohio

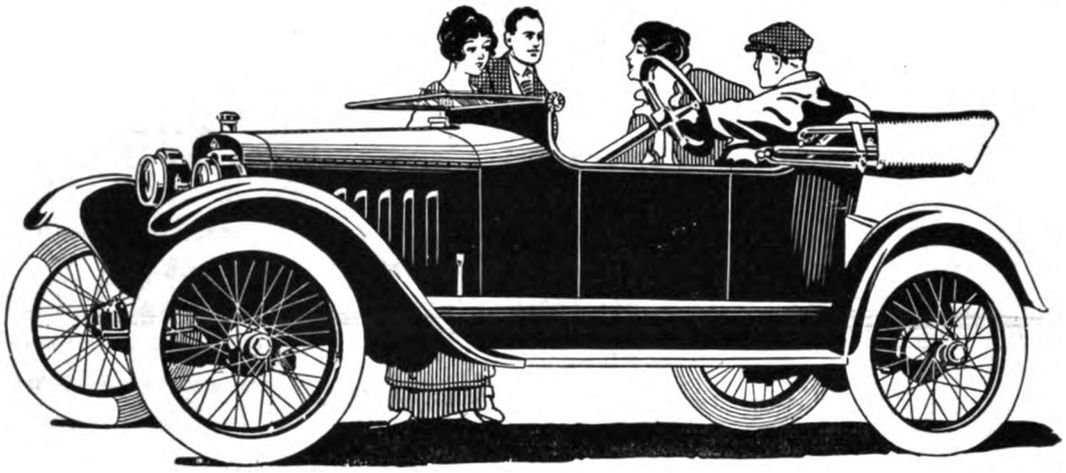
New York Branch: 228-230 W. 58th St.
Chicago Branch: 2241 Michigan Ave.
Detroit Branch: 736-740 Woodward Ave.
San Francisco Branch: 821 Monadnock Bldg.
Indianapolis Branch: 318 North Illinois Ave.

SERVICE STATIONS IN ALL PRINCIPAL CITIES IN THE UNITED STATES, CANADA AND MEXICO

(112)

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The New SAXON $395



A New Car—New Dealer Discounts

It Will Pay You to Learn About Both

The new Saxon with running boards and 38 other detail improvements has caused a *new wave of Saxon enthusiasm* throughout the country. This condition and our new selling proposition create a real dealer's opportunity.

Some Things for Dealers to Think About

The Saxon car and the Saxon Company are successful. Both are established. We are in business to stay. We have demonstrated that we can do what many "wiseacres" of the automobile business said we could not do—namely, market the Saxon car at $395 at a profit.

Within four months after we began making shipments we had shipped 5,000 cars; **this is more cars than any company ever shipped in the same length of time after starting in the automobile business.**

We have not only shipped a great many cars, but we have constantly improved them. Our most experienced dealers tell us that no car has ever been so rapidly and thoroughly improved and refined and made so continually more appealing to the public as the Saxon car.

Saxon Has Found Its Market

Today we have more orders than ever before. We are receiving more and more orders in every mail. The reason for this is that the Saxon car has found its market. We have demonstrated that there is a distinct field for a thoroughly good, good-looking two-passenger car that can be economically operated.

The Saxon car today is the best two-passenger automobile in the whole world, everything considered. It is the best buy at the price because on the average it is most suitable for the man who wants a two-passenger machine.

It has more room than any other; it is more comfortable to ride in; it is better looking; it is built of better materials; it is more up-to-date in design; it has plenty of power for all emergencies and all road conditions; and it can be kept running for less cost per mile than any other car.

The success of the Saxon car at $395, the great public interest in it, the enthusiasm of Saxon dealers and Saxon owners has done more than any other one thing to make a number of companies in the low priced field cut their prices.

Price Right From the Start

The price of the Saxon car does not need to be cut in order for it to sell in large quantities.

We put the full value into the Saxon car in the beginning.

From the first we have accepted a very small profit per car. We are still accepting it, because we are here to do business on a larger and larger scale, and that is possible only when the buyer is getting big value for his money.

We give every buyer of a Saxon car more than he can get in any other car in the world at the same price. We have an exceptional proposition for dealers. It will pay you to investigate this money-making opportunity.

Write Us Regarding Open Territory

Saxon Motor Company, Detroit, Dept. N

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Herff-Brooks

Herff-Brooks Six—$1375

6 Cylinders, 50 H. P.
Motor 4"x4½"
124" Wheelbase
Bosch DU High Tension Magneto
One Man Top
Honeycomb Radiator
34"x4" Goodyear Tires
Timken and New Departure Bearings
Electric Starting and Lighting
18" Folding Down Steering Wheel
Stewart Speedometer
Six Cylinders
Seven Bearing Crankshaft
Headlight Dimmers
Demountable Rims
Complete Equipment

The Smashing Value of the Year

The Herff-Brooks dealer fears no competition. His car compares most favorably with any Six within a wide range of its price, and the Herff-Brooks price is lower.

Trade follows price, and the stream of customers entering your lower-priced competitors' doors will turn into your door when you show the $1375 Herff-Brooks Six.

That's why this Six is the smashing value of the year. All over this country it will be breaking up plans for buying higher priced sixes and turning trade to the Herff-Brooks dealer.

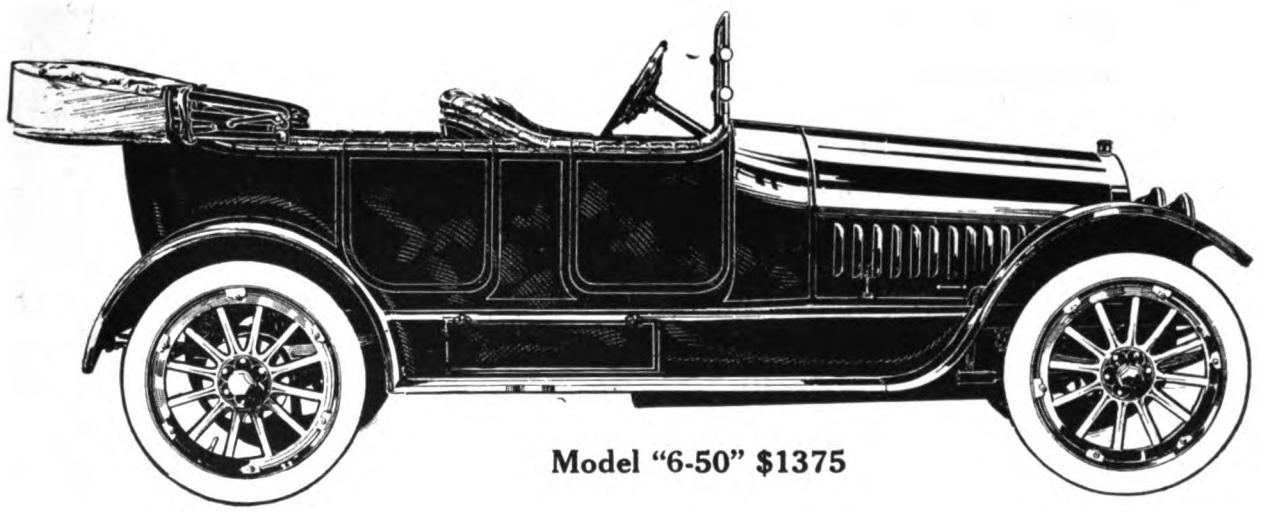
There is something new under the sun. The Herff-Brooks Six is a new ideal of a fine car at a low price. It means bigger profits and a better trade for many dealers, and a new idea of value for many buyers.

Come to Indianapolis at our Expense

WE will gladly pay the railroad fare of any dealer who, coming to Indianapolis and finding our facilities as we state, makes a dealer's agreement with us. No dealer ever inspected the home of Herff-Brooks car without joining forces with us.

The $1100 Herff-Brooks Four

Four cylinders
40-horsepower
Motor 4½ in. x 5 in.
Bosch high tension magneto DU system
Folding down steering wheel
Electric lights and starting
Demountable rims with extra rim
Stromberg carburetor
One-man top
34 x 4 in. Goodyear tires
Stewart speedometer
118-in. wheelbase
Timken and New Departure bearings
Five crankshaft bearings
Headlight dimmers
Complete equipment



Model "6-50" $1375

The Herff-Brooks Corporation, Indianapolis, Indiana

Write for catalog MW

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Ask the factory for the Waltham

To everybody, "Waltham" means a good timepiece. The presence of a Waltham Automobile Timepiece is taken as proof that the car's equipment is *right.*

A car with a Waltham will not keep coming back to the dealer with a "clock out of order". The Waltham is the only timepiece scientifically built to resist road shocks and changing temperatures. It will save you time and petty annoyances; it will help to keep your customers happy. It is indispensable in the equipment of the high-grade car.

Ask the factory for the Waltham! You will be in good company. These cars use the Waltham for regular standard equipment:

CRANE
DETROIT
FRANKLIN
JEFFERY
LOCOMOBILE
LOZIER
MARMON
OLDSMOBILE
PACKARD
PIERCE-ARROW
RAUCH & LANG
ROLLS-ROYCE
RUSSELL-KNIGHT
SIMPLEX
STEVENS-DURYEA
WHITE
WINTON

Waltham Watch Company, Waltham, Mass.

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Beginning the SEVENTH YEAR of Exclusive Six-Cylinder Experience Comes the New

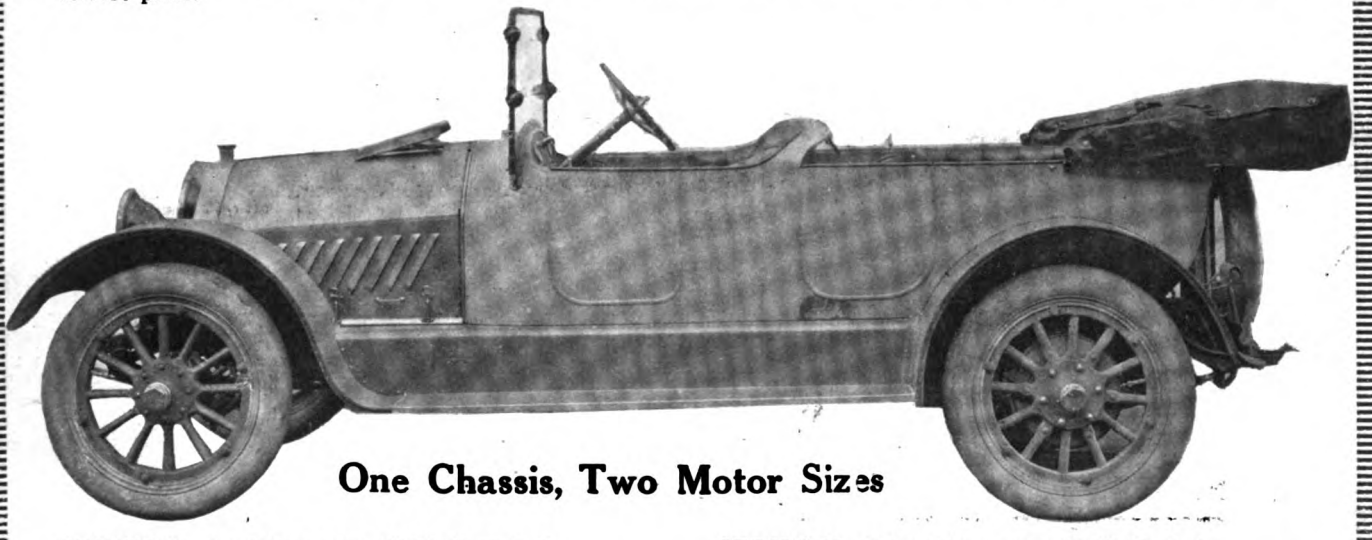
McFARLAN SIX

UNIQUE IN APPEARANCE. EVERY ADVANCED FEATURE. UNEQUALLED BEAUTY. LIGHTER BUT NOT WEAKER. MOST COMFORTABLE CAR BUILT. 3 TO 60 M. P. H. ON HIGH. EASIEST RIDING QUALITIES. BETTER VALUE. MOST CONVENIENTLY ARRANGED. FEW CHASSIS CHANGES.

MOST ECONOMICAL CAR, POWER CONSIDERED, IN THE WORLD. WIDEST RANGE OF CHOICE OF INDIVIDUAL FEATURES. A CAR TO BE PROUD OF, WHATEVER THE COMPANY OR OCCASION.

THE ONLY TRIED AND PROVEN MEDIUM-PRICED SIX ON THE AMERICAN MARKET.

Six years of exclusive six-cylinder experience are built into it, the only medium-priced six so backed. Present chassis model unchanged, except in detail, for three years. Proven to be as good as it is possible to build. Built on a STRICT QUALITY BASIS FOR LONG LIFE, not to meet a mad, competitive price. Extreme only in the margin of safety for passengers. A car for the man who wants the BEST VALUE rather than the lowest price.



One Chassis, Two Motor Sizes

SERIES T—4 x 6 in. motor, 67 H. P., 2, 4, 5, 6 and 7-Passenger Open Models	$2590.00	SERIES X—4½ x 6 in. motor, 90 H. P., 2, 4, 5, 6 and 7-Passenger Open Models	$2900.00
4-Passenger Coupe	$3300.00	4-Passenger Coupe	$3610.00
7-Passenger Limousine	$4000.00	7-Passenger Limousine	$4310.00

Westinghouse Electric or McFarlan Pneumatic Starter optional, no extra charge. Westinghouse Ignition. Klaxon Horn, large size. Warner Speedometer. Truffault-Hartford Shock Absorbers all around. Firestone Rims. Non-Skid Tires on rear wheels. LBA Storage Battery. Tire pump on all models with hose and gauge. One-Man Top optional. One-Minute Curtains. Improved tire carrier on rear, only one buckle to loosen. New body lines, all smooth, no hinges. More room in bodies. Concealed box for small articles in tonneau. Dimmer attachment on headlights. Ball bearing steering knuckles. Vacuum gasoline feed. Gasoline tank in rear. New type Stromberg Carburetor, more economical. Inspection lamp and cigar lighter. Longer wheelbase, now 132 inches. Three hundred pounds less weight. Softer upholstery. Primer. Silk mohair tops.
INDIVIDUAL SERVICE:—Optional colors; optional colors and styles of upholstery. Every car fitted, painted and equipped to individual ideas, if desired.

THE CATALOGUE IS READY

McFARLAN MOTOR COMPANY, Connersville, Indiana, U. S. A.

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Mosler Vesuvius Plugs



Have no equals for speed and power.

Made to fit any engine, any thread.

Stone Insulation is practically unbreakable.

Unique method of assembly renders Vesuvius Plugs absolutely gas tight and insures perfect adjustment of sparking points.

A.R. MOSLER & Co.
NEW YORK N.Y.

199-R

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POWERFUL INDESTRUCTIBLE AND SURE

Powerful because of faultless design.

Indestructible because of the finest materials.

Sure because of methods and workmanship employed in manufacture.

EXCLUSIVE FEATURE

Note ears on collar.

The only plug that has means for assembly without rotating the insulator.

Washer and ears take up all friction of the nut and give the direct straight pressure which makes the plug absolutely gas tight.



Collar takes up friction of nut.

Collar cannot turn when nut is tightened because ears on collar fit into slots in shell.

0631

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Seven Solid Reasons for Using Gurney Bearings

What are the facts behind the Gurney success?

Distinctive features of Gurney Ball Bearings.

1. Unique Design. Full Type, No Filling Slots, Full Depth of Raceways.
2. Thrust Capacity that puts them in a class by themselves, in Radio-Thrust Bearings up to 100 per cent.
3. Single piece, Jointless Separator, permitting the maximum number of the minimum size of balls.
4. Raceways ground to the contour proved and admitted to be most efficient, and always so ground.
5. Rings ground to a degree of concentricity unapproached by any other make.
6. Made to a degree of accuracy unequalled by any others.
7. Uniformity. Every ring that goes through our factory is not only produced by processes that give it these distinctive characteristics, but is subjected to drastic tests, to the most minute and rigid inspection, which none but the perfect can pass. If it were not for our wonderful processes of production we could not afford to subject our products to the hardships of testing and inspecting they have to undergo. The latter is made commercially possible by the former. For these reasons our bearings have, as perhaps the most important of all, this quality of uniformity.

CAPACITY GURNEY ENDURANCE

Gurney Ball Bearing Company

Jamestown, N. Y.

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TIMKEN
BEARINGS & AXLES

Know Motor Car Values

To *know* motor-car values you need to know the values of the parts.

Because the motor car is a machine. And its use-service-value depends upon the rightness of its component parts.

No parts are more important to know than the bearings—because they safeguard the other vital moving parts that give "life" to the car.

Where the Bearings Are: On the axle spindles in the hubs of all four wheels, in the steering knuckle heads, in the transmission, on the pinion shaft, each side of the differential—these are the hard service places where only the best bearings will stand up to year-after-year use.

What the Bearings Must Do: Bearings must reduce friction to almost nothing—all good anti-friction bearings do this. They must sustain the vertical load and the sudden increases in that load that come with rapid travel over rough road surfaces. They must meet severe end-pressure along the line of the shaft, a force that often exceeds vertical load.

Weight of car and passengers or freight pressing down on wheel bearings is a good example of vertical load. "Mass-momentum" of car and contents pressing sideways against the wheels as you round a corner is a good example of end-thrust. Keep both vertical load and end-thrust in mind as you read further.

Types of Bearings in Use: Anti-friction bearings may be divided into two general groups—Ball Bearings and Roller Bearings. These groups may be subdivided thus:

Ball Bearings		Roller Bearings	
1. Annular	2. Cup-and-Cone	3. Straight	4. Tapered

The illustrations show an example of each of the four kinds. From the text with the pictures you will note these interesting facts:

(*a*) A roller carries more direct load in proportion to its diameter than a ball because it carries the load along a line instead of on one or two mere points.

(*b*) Annular ball bearings have very little capacity for end-thrust, and straight roller bearings none and they cannot be adjusted to take up wear. Hence, they are often used with additional thrust bearings, and when sufficiently worn, they must be replaced with new bearings.

(*c*) Cup-and-cone ball bearings meet end-thrust to some extent but only at great sacrifice of capacity for vertical load.

(*d*) Cup-and-cone ball bearings can be adjusted—but this does not restore full efficiency because the slightest wear destroys the proper curvature of the ball race.

(*e*) Tapered roller bearings have greater capacity for both vertical load and end-thrust. Pressure is distributed over wide surfaces, hence wear is minimized. The slight wear inevitable in any bearing cannot affect the taper of cone, rollers or cup. Therefore, simply moving these parts into slightly closer contact with each other brings cup, rollers and cone into the same relations that existed before the minute wear occurred. This "adjustment" restores the tapered roller bearing to full efficiency.

The Conclusion is Irresistible: What's more it is backed by the experience of several hundred thousand motorists with Timken Tapered Roller Bearings *at the points of severest service* in the great majority of high-grade motor cars.

The story of bearings and axles is told in an interesting, human sort of way in three Timken booklets, one "On Bearings," another "On Axles," a third "The Companies Timken Keeps" which tells where Timken Bearings and Axles are located in each model of Timken-equipped pleasure and commercial cars. Write for these three Timken Booklets to Department T-5, either Timken Company. They'll be mailed to you free. No follow-up, no salesman will call. Write today.



The Timken Roller Bearing Co.
Canton, Ohio

The Timken-Detroit Axle Co.
Detroit, Michigan

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Defiance to Wear and Weather

Demand these characteristics in Automobile Top Coverings.

Laidlaw Burbank Top Covering is as indifferent to rains and storms as is this sturdy pine.

The fact that Laidlaw Burbank Top covering is made without resort to rubber, artificial leather or such short-lived compositions to make it waterproof, is the reason for its durability and service.

The extremes of summer and winter do not affect it. There is nothing in it to deteriorate.

Lasting service can be had only in a top material which does not jeopardize its durability by the use of such short-lived media as rubber or artificial leather compounds.

Laidlaw Burbank Top Coverings are equally as waterproof as those fabrics which employ rubber, not only for the short time rubber is capable of resisting natural deterioration, but for the life of the car.

The Laidlaw Company, Inc.
126-32 West 46th Street New York, N. Y.

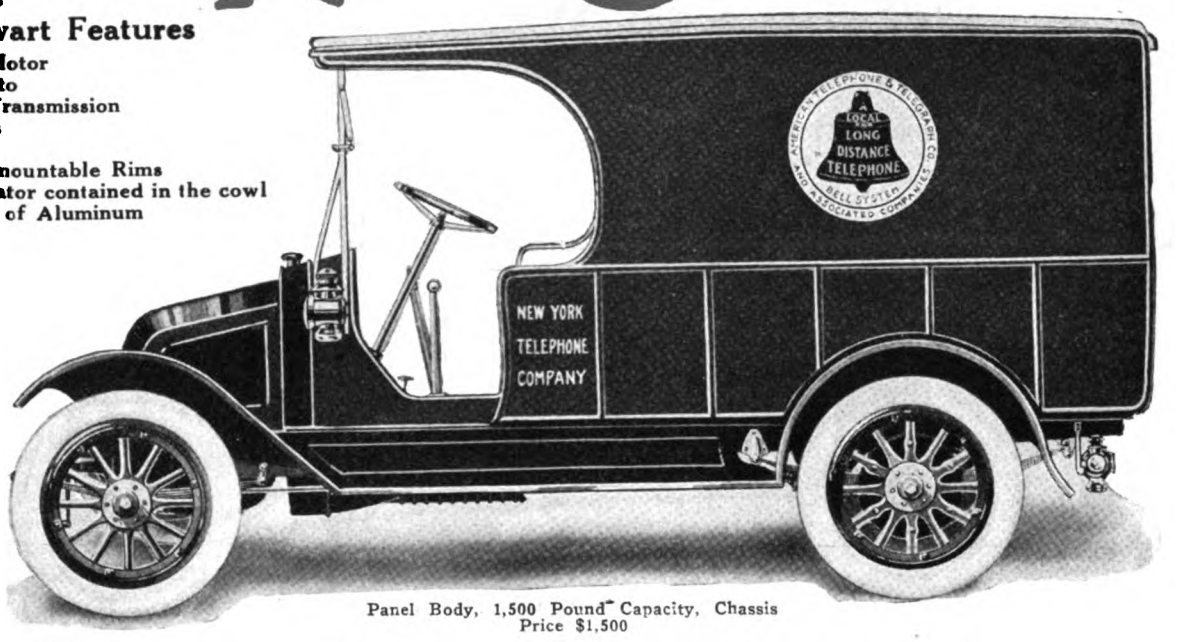


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The New Stewart

Stewart Features

Continental Motor
Bosch Magneto
Brown-Lipe Transmission
Timken Axles
Spicer Joints
Firestone Demountable Rims
Fedders Radiator contained in the cowl
Panel Bodies of Aluminum



Panel Body, 1,500 Pound Capacity, Chassis Price $1,500

A Better Truck—A Bigger Opportunity for Dealers

Here is the new 1,500 pound Stewart—the light delivery truck that is years ahead of any other on the market—with 500 less parts than any other truck of its type, more simple, more fool-proof, more economical of tires and gasoline consumption.

THE Stewart truck has always proved a money-maker for dealers. With its added features this new Stewart will make more money for dealers than ever before.

For the new Stewart is built of absolutely the finest materials purchasable today. No truck at any price has better material and workmanship than the Stewart.

Why Stewarts Sell So Fast

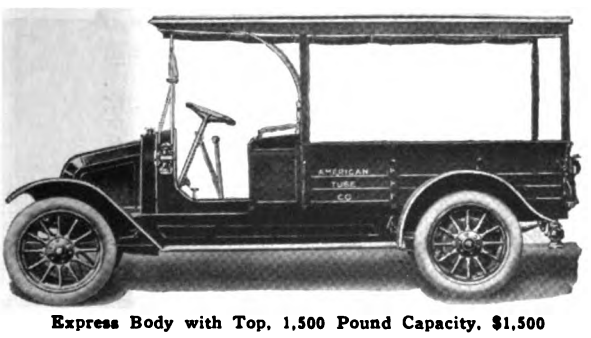
Stewart trucks always — everywhere — make good, as they have made good for three years. We honestly do not know of a single dissatisfied owner.

We do not know of a single case where a Stewart truck has been discarded for any other type of truck.

50 per cent of our business comes from merchants who have used other makes of delivery trucks.

Our sale of repair parts for a year averaged only $1.37 per truck.

Owners report 5,000 to 8,000 miles from a set of tires.



Express Body with Top, 1,500 Pound Capacity, $1,500

In 120 Cities and 80 Lines of Trade

These records indicate why Stewart trucks are today making money for dealers and merchants in over 120 cities in more than 80 lines of business in the United States, Canada and South America.

These performances account for the enviable repeat order record of Stewart trucks. For instance, the Bell Telephone Company which purchased 9 Stewarts now has a fleet of 19. The Buffalo Evening News has increased its fleet of Stewarts from 6 to 11. The Wagner Pastry Co., Newark, N. J., operate 8 Stewarts; The Peerless Laundry Co., Los Angeles, 5.

Other repeat orders have come from the Item Biscuit Co., Omaha; Bonwit-Teller & Co., Fifth Avenue, New York; Gerhart-Lang Meat Co., Buffalo; Rice & Kelly, Pittsfield, Mass.; Kearns & Carroll Silk Co., Paterson, N. J. And so on and so forth.

Ask anybody about the Stewart. Write for complete information about the new Stewart. Write today. Find out about our opportunity to dealers. Ask for our book "How Motor Delivery Pays."

A New Policy for Dealers

Our dealership proposition is an unusually liberal one. We do not require dealers to put up a lot of deposit money and contract for a big number of trucks. With our increased facilities, which means larger output, we so arrange our schedule as to have a certain number of trucks ahead at all times. Thus we can assure prompt deliveries.

Stewart trucks are supplied with any type of commercial body, also bodies for ambulances, police patrols, casket wagons, hotel busses, etc.

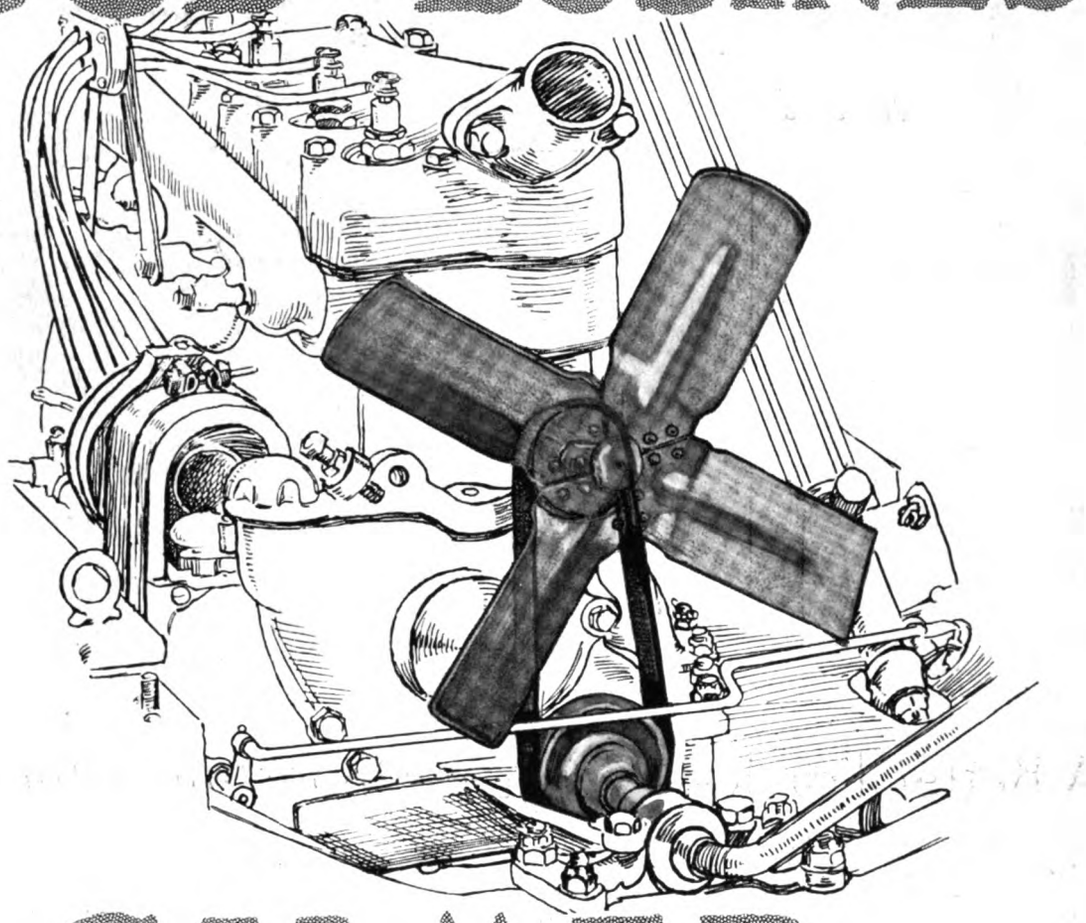
Write today and find out how it will be to your advantage to handle the Stewart.

Stewart Motor Corporation, Buffalo, N.Y.

T. R. LIPPARD, Pres. R. G. STEWART, Vice-Pres. and Ch. Eng.
H. P. LENTZ, Sec. and Treas.

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GOOD BUSINESS



GILMER
FORD FAN BELTS

are woven endless and always keep their uniform thickness, strength and durability. Such a belt runs without jump or vibration and is the most efficient ever produced for use with "short center" pulleys.

Once put on, a Gilmer Fan Belt does not require adjustment or attention. It becomes a part of the engine—doing its work with the same regularity and constancy as any other part of the motor.

Gilmer Fan Belts are standard equipment on the larger of American made cars. They are the best of all woven belts and so far superior to the ordinary leather belt, that any comparison is unjust.

Oil, grease, dirt or water cannot affect Gilmer Belts.

There is a constant demand for Gilmer Fan Belts by the owners of all classes of cars, and we recommend that every dealer, especially those who cater to the custom of Ford owners, carry these belts in stock, for they require no special selling effort, take up very little shelf room and our discounts give you a large percentage of profit.

Send us five cents in stamps and we will send you a free sample Ford Fan Belt.

Descriptive folder and prices on Fan Belts sent on request.

ACCESSORY DEPARTMENT

L. H. GILMER, 52 N. 7th Street, Philadelphia, Pa.

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Studebaker

THE Studebaker dealer invariably places his competitors on the defensive.

He realizes that the many advantages the manufactured automobile offers over the partly manufactured car are the strongest selling arguments that can be used.

He knows that every piece of steel that enters the Studebaker plants is purchased according to Special Studebaker formulas.

He knows that Studebaker steels are all heat treated in Studebaker plants.

He knows that Studebaker builds, finishes and upholsters all Studebaker bodies.

He knows that Studebaker manufactures the Studebaker motor—probably the most efficient and accessible motor in the world.

He knows that with the exception of the electrical system and the Timken Bearings, all parts of Studebaker cars are made by and within the Studebaker plants.

With these strong selling arguments at his disposal, the Studebaker dealer invariably occupies the dominant position in his community.

Owing to the necessity of dividing and subdividing territory, we can still use the services of a few capable and experienced dealers in various sections of the country.

Write, wire or call at the Studebaker plants for complete information.

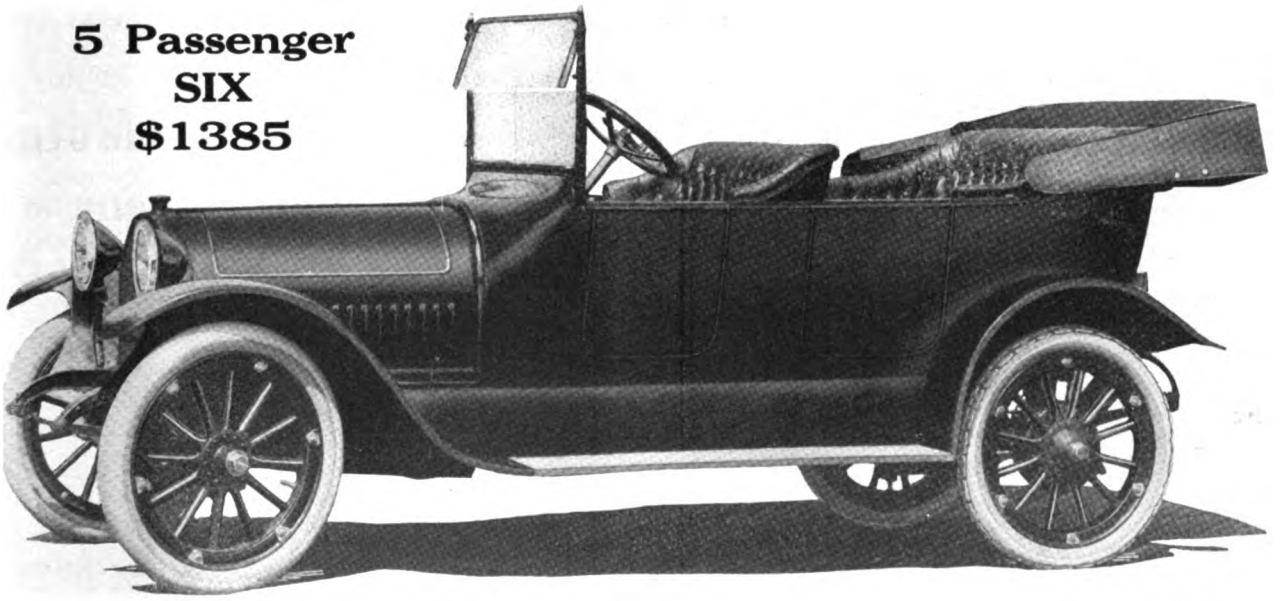
STUDEBAKER - DETROIT

Prices

F. O. B. Detroit

Four Roadster	**$985**
Four Touring Car	**985**
5 Passenger Six	**1385**
7 Passenger Six	**1450**

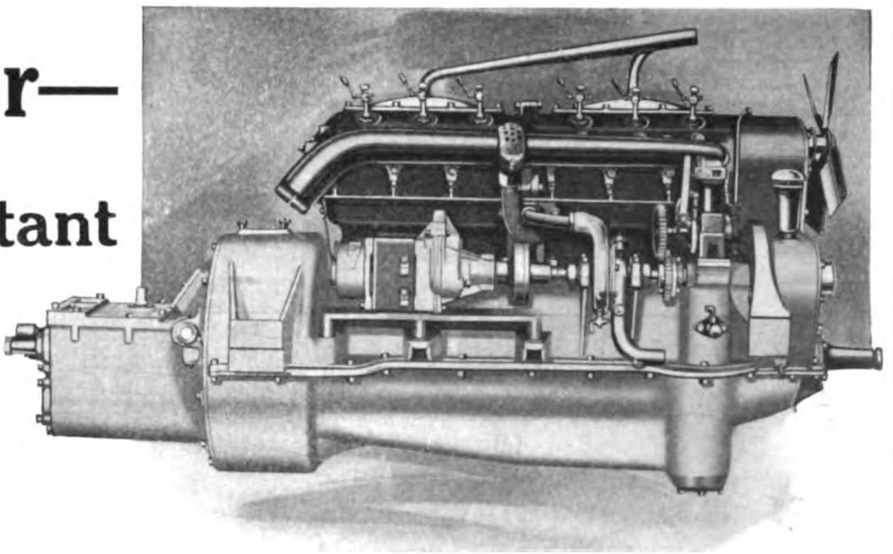
We extend a cordial invitation to all dealers when in Detroit to inspect Studebaker plants.



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The Motor—

Most Important Unit of Any Car



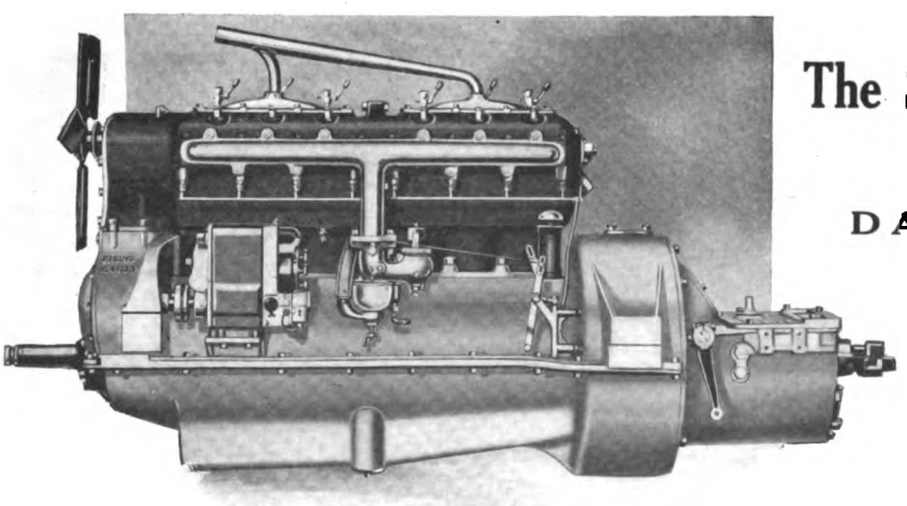
AN automobile is something that carries you over the road. The unit that makes it go—the motor—is, after all, the one feature that merits your most thoughtful consideration in your car selection.

The Speedwell Six Cylinder, Rotary Valve Motor is the most advanced of any tested and proven type of automobile motor. Of its scores of advantages, the principle ones are—***simplicity, freedom from valve wear and adjustment, silence, lack of vibration, greater power and efficiency, and longer life.*** The new Speedwell catalog explains why this motor is better, send for your copy.

Speedwell ROTARY

SPEEDWELL ROTARY SIXES are built in one chassis model—the wheel base is 135 inches, Westinghouse starting, lighting and ignition, Golde-Patent one-man top, and finest and most complete equipment throughout.

Four and Five Passenger Touring Models, $2850
Six and Seven Passenger Touring Models, 2950



The Speedwell Motor Car Company

DAYTON, OHIO

"The First Car in America with Rotary Valve Motor"

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The Choice of

The Successful Dealer

is

The Public Choice-

He Knows a Good Motor Car

THE business men who make money selling motor cars are keen students of up-to-date engineering practice and design.

They visit the factories, study the trade journals, and analyze public demand. Jeffery dealers are successful business men. Their opinions are sought by the buying public because they sell a product manufactured by a leader in the industry.

The wise buyer takes advice only from the man who knows.

The Thomas B. Jeffery Company



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Successful Dealers See



From our very pleasant experience in handling the Jeffery Four and Jeffery Six in 1914 we believe that the Jeffery Chesterfield Six is one of the finest cars ever placed on the market. We believe that the Jeffery organization is the finest ever and that the American public will have to SEE the Jeffery line for 1915.

J. Scott Hurley
Philadelphia, Pa

The Jeffery line for 1915 is a little better than anything else on the market. I have looked over a great many different lines of 1915 cars and I haven't seen anything that will sell for anything like this price which really has the quality in it. The quad truck demonstrated this morning is going to revolutionize the truck business entirely. I am not surprised that the government adopted it, as it is really the only truck made that will follow the route that it will. Without question the Jeffery line for 1915 is the line and the Four is a little wonder. I think so much of it that I am taking one home with me today.

Chas. H. Frazier
South Bend, Ind.

The results obtained from the Four have been so far beyond my expectations that it seems hardly possible to improve on it, but the general performance and appearance of the Jeffery Chesterfield Six has created in me an enthusiasm that I am unable to express.

These two cars with the others make up a line that any dealer may consider himself proud to represent.

F. A. Winerich
San Antonio, Texas.

I have attended the Jeffery Convention of dealers and about all I can say is that I feel sorry for any dealer in the United States who knows what the Jeffery 1914 and 1915 models are and is not in position to secure this agency. My opinion is that both the pleasure cars and trucks are the most perfect samples of automobile manufacture that has ever been my good fortune to see.

The Jeffery organization, both productive and selling, is in keeping with the car—that is, is as near perfect as is possible for such an organization to be.

A. M. Robbins
Chicago, Ill.

The beautiful lines and unusual riding qualities of the Jeffery Chesterfield Six model, coupled with the ample power and ability to get away, should make this an unusually popular model in our territory this season. It embodies all of the wonderfully fine features of the Jeffery Four, which has been extremely successful during the entire season, and with the new features, such as the spring construction and worm drive, will make this an ideal car for a man desiring a six cylinder car of quality.

The new quad chassis, which has been equipped with a combination hose and chemical body and delivered by us to the City of Chippewa Falls, is a marvel of power, strength and flexibility. No truck ever shown in this part of the State has created so much favorable comment and it is without doubt several years ahead of anything on the market.

F. A. Bigler
Chippewa Falls, Wis.

After carefully examining all the different up-to-date models and reading a description of the best-made European cars I am fully convinced that for up-to-date automobiles Jeffery has got it on any concern in this country.

H. R. Nelson
Lena, Ill.

In my 14 years of experience as an automobile dealer I have attended a great many dealers' conventions held by some of the most prominent and successful automobile manufacturers in the industry. I have never attended a convention that was conducted any better or where there was as much enthusiasm shown by the dealers as at this convention.

I believe that the different models represented in the Jeffery Four, the Jeffery Chesterfield Six, Big Six and in the trucks are the greatest values produced today by any factory in the United States.

J. A. Cramer
Buffalo, N. Y.

The two days convention at Kenosha at the Jeffery factory satisfy me that in the Jeffery line we have the greatest line of motor cars ever produced. The new addition, the Jeffery Chesterfield Six, just rounds out the line. The Four is a wonder, mention of the beautiful big Six is unnecessary and the addition of the Chesterfield Six assures me that I can return to Milwaukee confident that the 1915 selling season will be the best in my history. The spirit of the Jeffery organization is wonderful and one cannot help but be seriously impressed with the fact that the onward movement of the Jeffery will stop at nothing but leadership.

Al Reeke
Milwaukee, Wis.

The Chesterfield Six I consider is the Light Six of the year. In style, comfort, power and simplicity of operation, comparing with other Sixes the high grade quality of the Chesterfield stands paramount. The convention can't help but reflect credit on an organization such as the organization of the Thomas B Jeffery Company

Jos. H. Greenwald
Cleveland, Ohio

MEN WHO SUCCEED

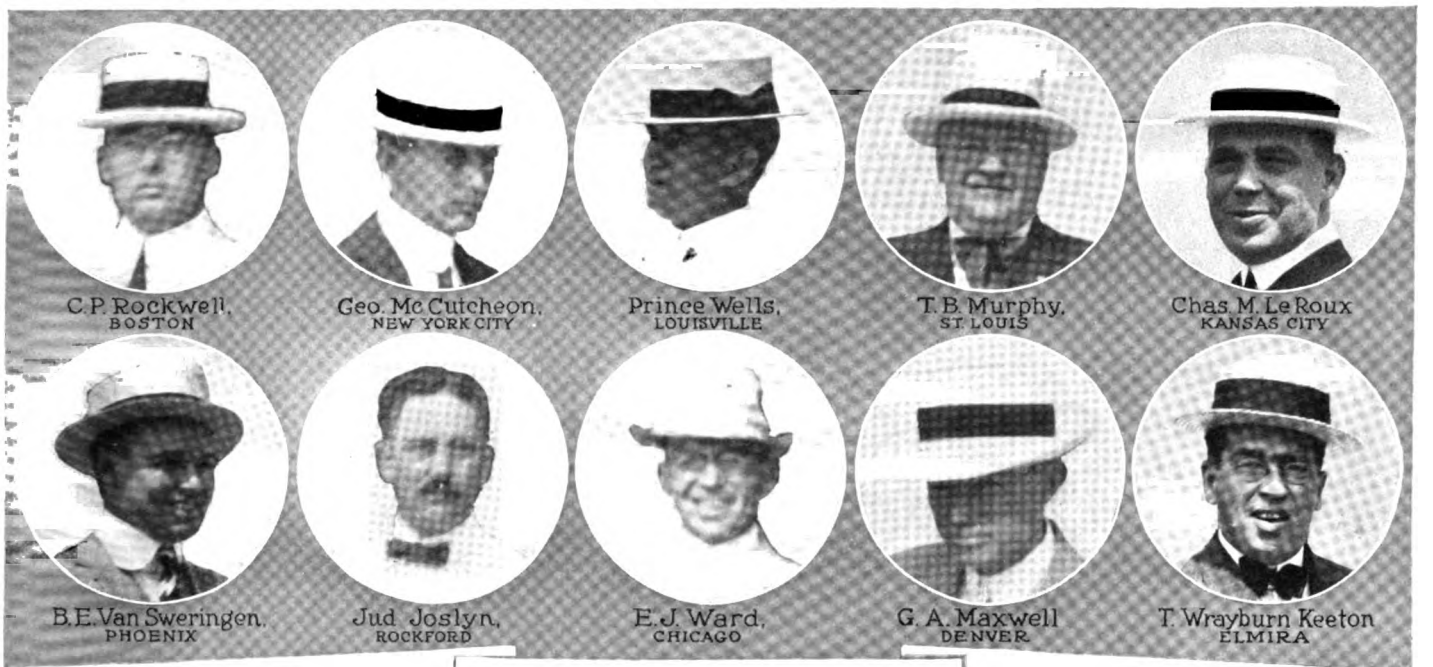
HERE are a score of the business men who sell Jeffery cars. Some of them have sold the Jeffery product for twenty-five years; others have just recently linked their success with ours.

There are scores of other loyal dealers, equally necessary to Jeffery success. There seems to be no difference in their enthusiasm. If the Jeffery Four had not been a mighty popular car—had it given any trouble in the hands of the user—these men would not be so loyal to it now that a new model has been introduced.

They would not have mentioned it in their letters. They were able to meet competition with the Four and come away with the order. That's what creates enthusiasm which is doubled when the car makes good.

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Big Business in Jeffery Cars



I am thoroughly satisfied with the Jeffery line for 1915. The Chesterfield Light Six is in a class by itself. I couldn't suggest an improvement and the trucks will be a sensation. The performance of the Quad was wonderful and quite unbelievable to one who hasn't seen it.

C. P. Rockwell
Boston, Mass.

I wish to thank you for the treatment I have received since I have been attending the convention at the Jeffery factory. There never has been a convention, in all my experience, that has been such a success.

I am more enthusiastic than I ever have been over the Jeffery line. I have always been your most enthusiastic dealer.

The Jeffery Four has been unsurpassed. I have sold 52 cars with not one dissatisfied owner and I am sure that the Chesterfield Six will be a worthy companion of the Jeffery Four.

T. V. Murphy
St. Louis, Mo.

For comfort, economy, style, beauty and power, the Jeffery Chesterfield Six far surpasses any car I have ever seen. Its excellence, coupled with that "keep-ahead-of-'em" spirit of the entire Jeffery organization gives the dealer something tangible upon which to build a permanent business and I consider it a privilege to be in the dealer's organization

C. M. LeRoux
Kansas City, Mo.

After comparing all advance information obtainable I have decided your line to be foremost on the American market. Your line of touring cars, consisting of the Four with a most enviable reputation, the Chesterfield Six and the Big Six, which with the refinements for 1915 is now superb, supplemented with the truck line now ready for delivery, makes a proposition which no live dealer can overlook, and the fact that you have my contract for so large a number of cars is corroborative evidence of the above.

Jud. Joslyn
Rockford, Ill.

During the two days spent at the dealers' convention at the Thomas B. Jeffery Company's factory, I looked over the Chesterfield Six, also the truck line in connection with the present Four and large Six and I find that the Chesterfield Six is ahead of any other car at anywhere near its price—very superior in a great many features, especially the very easy riding qualities. I saw feats performed with the Quad truck that in my judgment would be impossible to perform with any other truck on the market today at any price.

I have sold T. B. J.'s product for six years and believe at the present time that they have the easiest selling proposition on the market. With this line it will be easy sailing for the up-to-date dealer.

Dexter Stocking
Rochelle, Ill.

If I were going to build an ideal car, the Chesterfield Six would meet all my ideals. I see nothing to criticise and everything to praise.

The performance of the Four Wheel Drive this morning is beyond belief without seeing it. It will certainly do everything except talk.

Considering the Jeffery Four and Six our business will certainly exceed for 1915 any previous year and I am increasing my orders accordingly.

Prince Wells
Louisville, Ky.

I wish to be among those who express themselves by the already time worn statement, "It's a wonder. The Chesterfield Six embodies all that may be expected in a car. This car typifies the latest in comfort and superior quality which gives the Packard the predominance in its class, and we are glad to have the two cars—the Packard and Jeffery—associated in our work.

B. E. VanSweringen
Phoenix, Ariz.

The Jeffery organization is without any question the most wonderful organization I have ever visited. The line above all expectations. The new Chesterfield Six is the most wonderful style carriage I have ever ridden in.

The demonstration of the Quad truck this morning is almost unbelievable and I see a great future for this truck.

It was after giving all these matters due consideration that I finally decided to take on the Jeffery line in preference to any other line on the market.

G. S. McCutcheon, Brooklyn, N. Y.
Poertner Motor Car Co. of N. Y.

We owe our success naturally to the Jeffery Four. At the present time we have no suggestions or changes to be offered in this particular car, and are thankful that the Jeffery Company have seen their way clear to continue this car in its present state for 1915.

In my opinion the new Jeffery Chesterfield Six has everything else backed off the map.

W. W. Ingram
Rutland, Ill.

STUDY THEIR BUSINESS

THESE men know that the new Jeffery Chesterfield Six is an assured leader among economical Sixes because Jeffery built it. Because it contains the same high grade materials that made the Four an acknowledged leader.

Because it's ahead in engineering design—worm drive, high speed, high efficiency, European type motor, Cantilever springs, Vanadium steel parts, etc. Because it is distinctively beautiful—a style carriage —has individuality which appeals immediately to people of good taste.

Because it is economical and comfortable. If these men knew only Jeffery cars, if they visited the Jeffery plant alone, their opinions would not be worth much. It's the fact that they are students of the motor car industry, familiar with all leading cars and all the leading plants and assembling shops that wins for them the public confidence.

Jeffery

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A Few Features of the Highest Grade Moderate Priced Four and Six Cylinder Cars on the Market

FAMOUS JEFFERY FOUR

Motor, high speed, high efficiency, en bloc, 3¾ x 5¼, 38 H. P. Starting-lighting, U-S-L. Bearings, imported annular, ball. Transmission, four speed forward and reverse. Rear axle, full floating. Valves, Rich Tungsten steel. Clutch, cone type. Ignition, Bosch Duplex. Daimler leather couplings, Spicer Universals, Vanadium steel parts. Lubrication, combined force feed and splash. Rayfield carburetor. Left drive, center control. Wheel base, 116 inches. Weight, 2850. Tires, 34 x 4. Equipment complete. Top, rain vision wind shield, Klaxet horn, Stewart-Warner speedometer, ammeter, pump, jack, full set of tools, etc. The car that changed the trend of motor car design in America—the first high grade, light weight, economical car of distinctive beauty and with the easy riding qualities of the big, expensive cars. Price, $1450.

THE CHESTERFIELD SIX

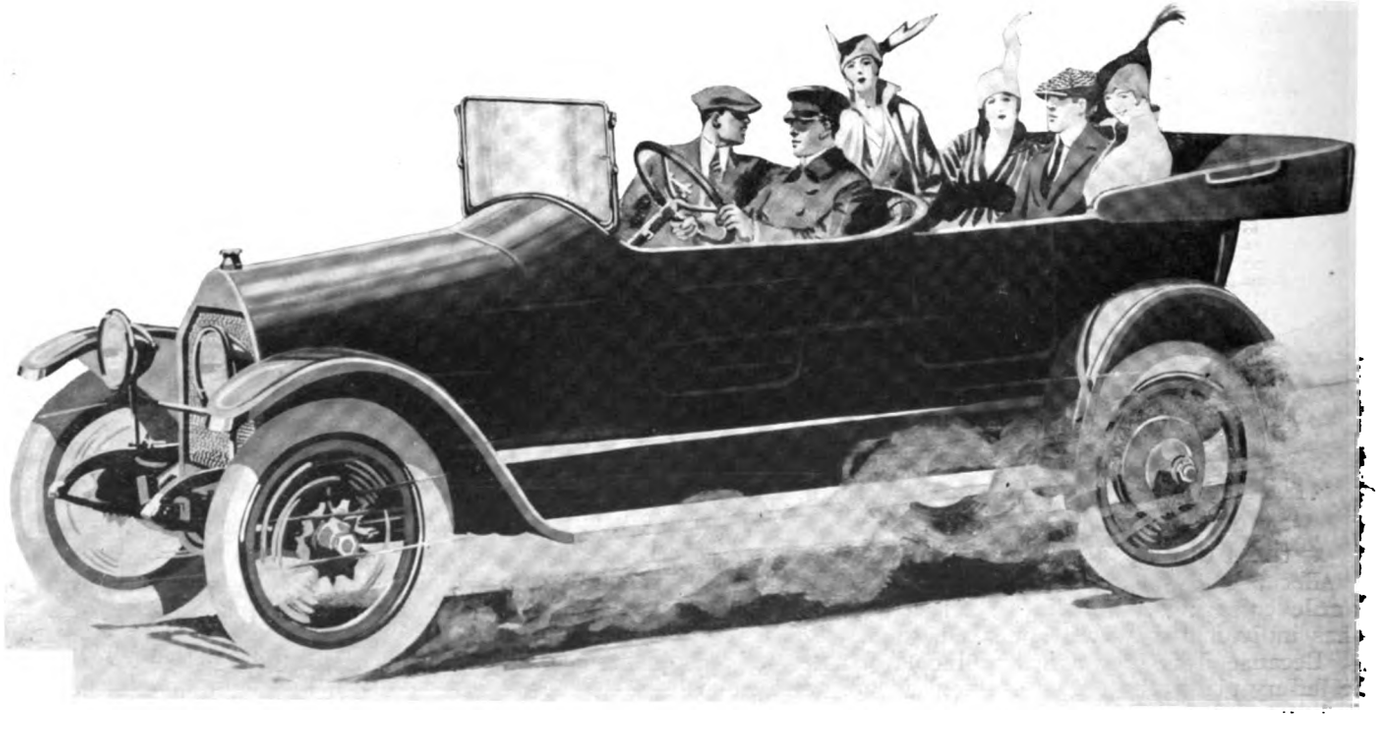
Motor, high speed, high efficiency, L head, six cylinder, bloc type, 3 x 5, weight 397 pounds. 35-42 H. P. Worm drive, full floating rear axle. Imported annular ball bearings. Bijur starting and lighting system. Four speed and reverse transmission. Cantilever springs. Bosch ignition, cables and plugs. Lubrication, combined constant splash from gravity feed operated by Vane pump. Three plate dry disc clutch. Rich Tungsten steel valves. European type cellular radiator, pump circulating cooling system. Cylindrical, seamless gasoline tank carried in rear with Stewart vacuum feed to Rayfield carburetor. 34 x 4 tires; wheel base, 122 inches; weight, 2850 lbs. Full French streamline Chesterfield body. One man top and complete high grade equipment. Price $1650.

The Jeffery Big Six, with Chesterfield body, built from the same high grade materials and equipped complete, $2400. Wheel base 133½ inches, 36 x 4½ tires. Weight, 3700 pounds.

Jeffery Motor Trucks—Three Quarter Ton—One and One Half Ton—Jeffery Quad

The Thomas B. Jeffery Company

Main Office and Works, Kenosha, Wisconsin



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COPLEY-PLAZA
BOSTON

THE Copley-Plaza became Boston's Finest Hotel from the moment it opened its doors to its patrons. For years to come it will retain this prestige.

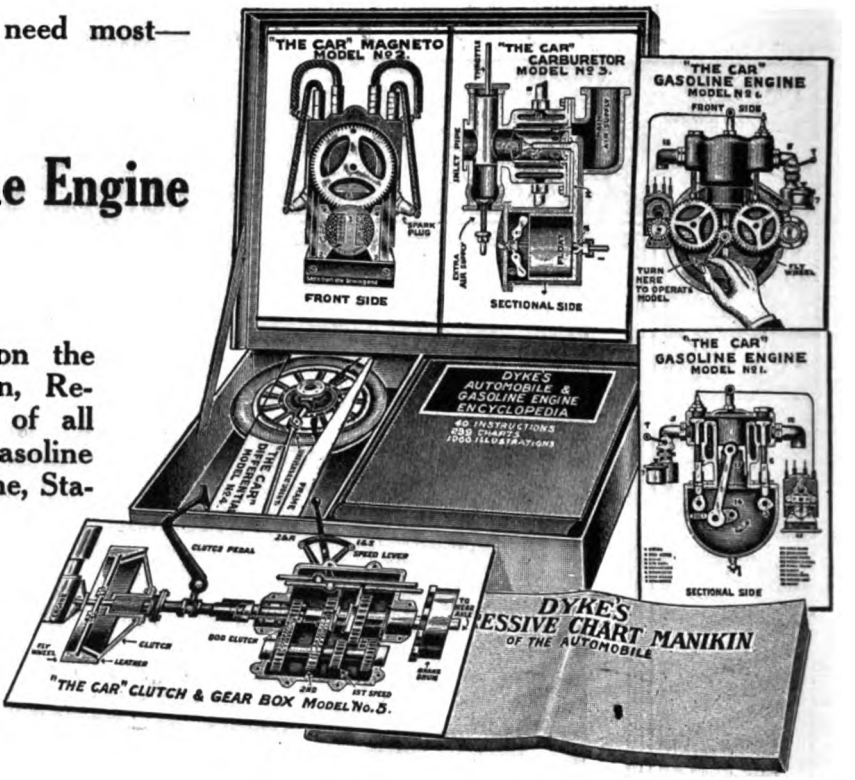
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Here it is—just the thing you need most—

Dyke's Automobile & Gasoline Engine Instructor

A Practical Instructor treating on the Principle, Construction, Operation, Repairing, Troubles and Remedies of all Automobiles and all types of Gasoline Engines: Auto, Motorcycle, Marine, Stationary and Aero.

A NEW IDEA invented by A. L. Dyke, the originator of the first automobile supply business and publisher of the first practical book on automobiles in America. Endorsed by Lord Montagu, the leading motor authority of England, and Chas. Duryea, Chas. Splitdorf and others. Simple, Thorough, Practical. Prepared for the NOVICE, but a handy guide and reference for the EXPERT.



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DESCRIPTION

ON THE WORKING MODELS YOU GET THE ACTUAL PRACTICE, see the actual INSIDE operation and learn the principle. The Instructions then explain and illustrate the variance in construction of the different parts in general use.

With these Models you learn more than you could from the real part itself because you see the inside operation—something impossible with the real part.

THE MODELS OPERATE BY HAND, ALL MOVING PARTS MADE OF REAL METAL. There are two sides to three of the models.

ON THE No. 1 ENGINE MODEL you learn the principle, then valve operation and how to set the valves. The same applies to all other models.

THE PROGRESSIVE CHART MANIKIN EXPLAINS WITH LARGE PROGRESSIVE DRAWINGS HOW THE AUTOMOBILE IS BUILT FROM THE GROUND UP; First the springs are mounted on the axles, then the frame on the springs, then the power plant on the frame, then the transmission and drive system, and so on until the car is completed. Key numbers of parts are referred to throughout the instructions.

THE ENCYCLOPEDIA contains 560 pages, 239 Charts and over 1000 Illustrations. It is divided into forty instructions, as follows:

> Assembly of the Car, Drives, Steering Springs & Brakes, Axles & Differentials, Clutches, Transmission or Change Gears, The Gasoline Engine, Engine Parts, Valve Timing, How Cylinders Fire, Two Cycle, Carburetion, Self Starters, Electric Ignition, Low Tension Coil, High Tension Coil, Wiring, Ignition, Timing, Various Ignition Systems, Low Tension Magneto, High Tension Magneto, Magneto Principle, Magneto Wiring, Magnetos Setting & Troubles, Storage Batteries, Lighting a Car, Cooling, Lubrication, Operating a Car, Rules of the Road, Care of the Car, Tires, Vulcanizing, Building a Garage & Repair Shop, Equipment, Tools, Use of Tools, Repairs & Adjustments, Digest of Troubles, Diagnosis & Remedies, Insurance, Laws, Horsepower, Tables, Measurements, Steam Car, Air Crafts, Pointers for Automobile Salesmen, Dictionary, Index.

EACH AND EVERY SUBJECT IS COVERED IN DETAIL WITH CLEAR ILLUSTRATIONS AND SIMPLE EXPLANATIONS—for instance: The Engine Subject covers all engines from 1 to 8 cylinder, explains the different valve systems and cylinders and crank shafts.

THE CARBURETION SUBJECT covers, first the principle of Carburetion, then the different constructions, and finally ends with clear detail rules for adjusting all leading carburetors.

THE ADJUSTMENT AND REPAIR INSTRUCTION is probably the most interesting. The subject of repairing begins with cleaning a car; cleaning carbon, chemically and mechanically; grinding valves; testing compression; taking up lost motion in valve stems and plungers; setting valves and timing the ignition; how to set all leading magnetos; scraping bearings; how to test for knocks and how to locate them; meshing the timing gears; fitting piston rings; carburetor repairs and adjustments; rewiring a car; ignition troubles and remedies; timer troubles and remedies; cooling troubles—how to clean and repair radiators; how to take up wear in differential; how to adjust the steering device; how to treat the clutch; lining up wheels, etc. In fact, every adjustment needed on a car is explained and fully illustrated.

THE INSTRUCTION ON SALESMANSHIP gives many pointers to the auto salesman in the way of advantages and disadvantages of different systems of ignition, carburetion, engines, etc.

THE INDEX AND THE DIGEST OF TROUBLES—With this Index the reader can find any trouble the auto is heir to, then turn to the Digest of Troubles and learn the cause and remedy, and then turn to the Repair Section and see how to repair it, or turn to the instruction and learn the principle and construction.

VALUE OF THIS INSTRUCTOR TO YOU. It will train you to become:

> (1) AN ENGINE EXPERT capable of diagnosing ignition, carburetion, valve timing, cooling troubles, and remedying them.
> (2) A DIAGNOSIST—who from knowing the principle and construction of all these subjects can instantly tell the cause of any trouble and apply the remedy.
> (3) A RUNNING GEAR EXPERT capable of diagnosing and remedying such troubles as differential, transmission, axles, brakes, steering wheels and axle troubles.
> (4) AN AUTO MECHANICIAN who can adjust and remedy all the troubles after diagnosing—the subject of repairing in this Instructor is complete in every respect.

YOU CAN'T AFFORD TO BE WITHOUT DYKE'S AUTOMOBILE AND GASOLINE INSTRUCTOR.

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> 5 Working Models
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> Book—Dyke's Automobile and Gasoline Engine Encyclopedia.

PRICE of the Dyke Automobile and Gasoline Engine INSTRUCTOR, as shown above, complete in a special box—$8.50. (Add 60c. if wanted prepaid.)

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BOOK DEPARTMENT **MOTOR WORLD** 231 West 39th St. NEW YORK CITY

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Maxwell "25"

The biggest automobile value ever offered for less than $1,000. Our production of 60,000 cars makes the new price of $695 fully equipped (WITH 17 NEW FEATURES) possible.

1—Pure stream-line body.
2—Adjustable front seat.
3—Sims high-tension magneto.
4—Three-quarter elliptic rear springs.
5—Tire brackets on rear.
6—Spring tension fan.
7—Kingston carbureter.
8—Clear Vision Wind Shield.
9—Foot-rest for accelerator pedal.
10—Concealed door hinges.
11—Gasoline tank located under dash cowl.
12—Crown fenders with all rivets concealed.
13—Head lights braced by rod running between lamps.
14—Famous make of anti-skid tires on rear.
15—Gracefully rounded, double-shell radiator equipped with shock absorbing device.
16—Instrument board, carrying speedometer, carbureter adjustment and gasoline filler.
17—Improved steering gear; spark and throttle control on quadrant under steering wheel; electric horn with button mounted on end of quadrant.

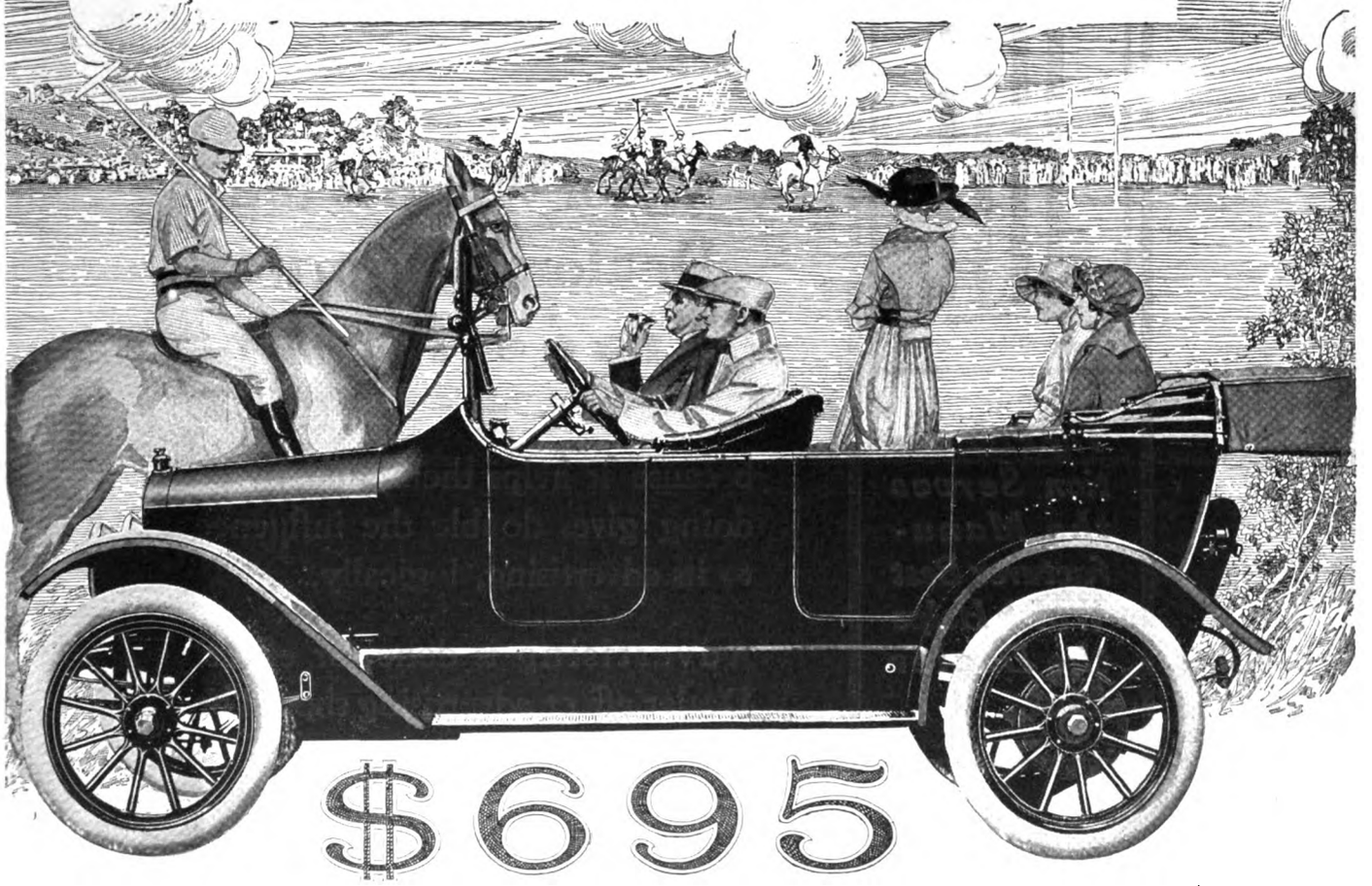
Automobile experts have refused to believe that anyone could produce a **Full Grown Five Passenger** really beautiful fully equipped car—a car with real high tension magneto—a car with sliding gear transmission—left hand drive center control, a car with practically every high priced car feature for less than $1,000.

Here it is. Here is a real automobile. Here is the easiest car to drive in the world—here is the greatest all around hill climbing car in the world. Here is an automobile to be really proud of.

HOLDS THE ROAD AT 50 MILES AN HOUR

See this "Wonder Car" at the Maxwell dealer nearest you. Write at once for the beautiful 1915 Maxwell Catalog.

Dept. F, MAXWELL MOTOR CO., INC., DETROIT, MICH.



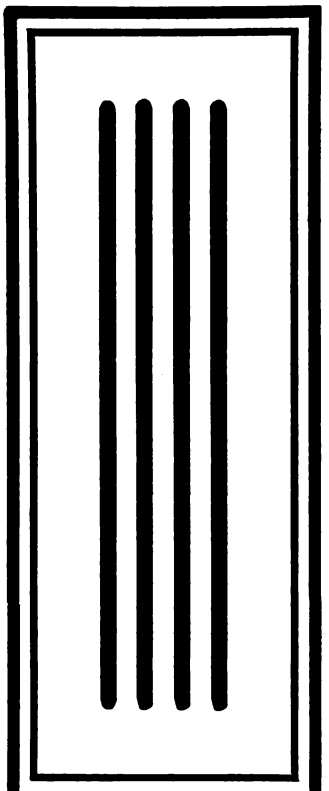
$695

With Electric Self Starter and Electric Lights $55 Extra

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MOTOR WORLD

The Dealer's Paper



The Publication Serves the Manufacturer Best Which Helps the Dealer Most.

ALL advertising is an effect—an influence. In the automobile business, any advertising campaign that is not designed to have a strong dealer effect and a strong influence upon the trade is poorly, even thoughtlessly planned and will fall far short of what it might have accomplished. This is so because advertising effort must go before and parallel to selling effort, and trade advertising should be your intimate personal connection with your actual or potential selling force.

Motor World is the Dealers' Favorite Trade Paper

because it helps them, and by so doing gives double the influence to its advertising, logically.

Advertising is done for effect. Dealer effect advertising should be done in the dealers' paper.

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(No Politics in this)

Facts first—wire carrying current to spark-plugs, lamps, starter and horn have rubber between the strands (the core) and the outside braids. This rubber cannot escape the rotting action of oil and grease, rubber's worst enemies—unless protected—and braids are mighty little protection.

Our Chemists have produced A "Protector" that protects

It's a substance unlike anything you ever saw—elastic and "rubbery" in general appearance, but not like rubber when subjected to oil or grease.

We Practice What We Preach—When Making

Packard

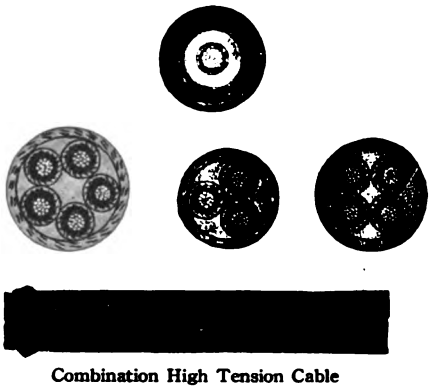
Protected Cable

This "protector" is applied to each individual conductor and to the completed cable in the form of a very light enamel which fills and closes every pore, successive coats being added until the rubber is **sealed** with an oil-proof covering—a kind of elastic "skin" which in no way injures the rubber or affects the cable's flexibility.

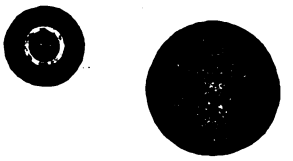
Protection against oil is thus **built into** the cable—and because oil is ever-present on an automobile or motor boat

We Believe in Protection

27 styles for Ignition, Starting and Lighting, always ready for immediate delivery. All protected.



Combination High Tension Cable



The Packard Electric Co.

Dept. D **Warren, O.**

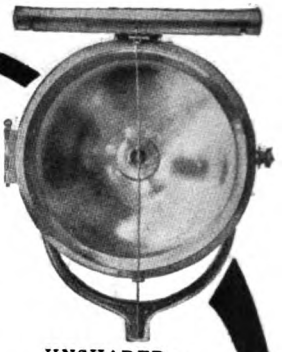
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SAFETY BY NIGHT

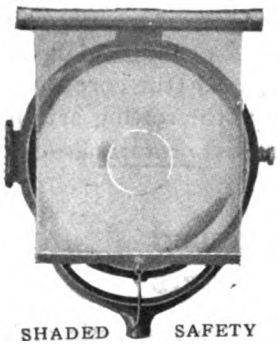
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are the fastest selling equipment on the accessory market today and they offer you, Mr. Dealer, an opportunity to sell every motorist in your city.



UNSHADED—DANGER

Safety First Headlight Shades made for any make of car using gas or electric headlights are controlled by a pedal from the driver's seat. With the shade drawn all possibility of the on-coming car running into you is eliminated and you can drive through fog or dust or around bad curves with safety. They eliminate the blinding glare but still retain the powerful driving light so necessary on the country road. Comply with all city regulations and are endorsed by city governments and automobile clubs. Can be attached by any one in one hour's time.



SHADED SAFETY

Write at once for full particulars and attractive discounts.

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First practical visible machine.
Winner of every International Record for typewriter

Speed, Accuracy, Stability

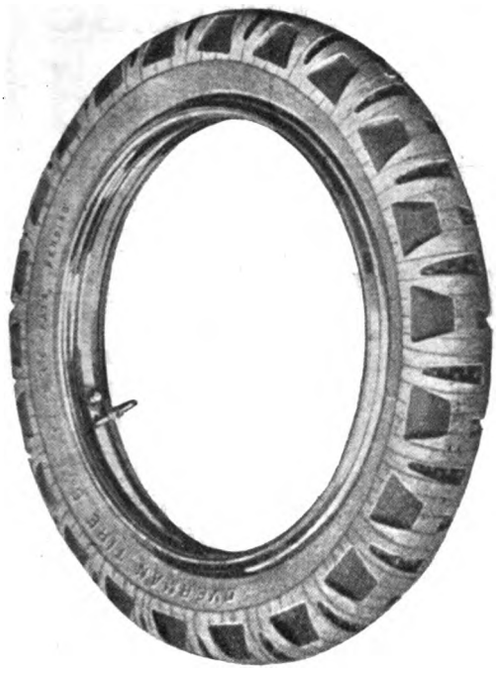
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UNDERWOOD is "The Machine You Will Eventually Buy"

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by its new method of construction offers a practical solution of tire problems



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We guarantee the Overman Tire for 5,000 miles. If any Overman Tire fails to give that mileage we will make the purchaser an allowance for the difference, charging for mileage on a basis of five thousand miles, said allowance to apply against future purchases. The tire is **better than our guarantee,** and with proper care will give greater mileage.

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While not absolutely puncture-proof, punctures with the Overman Tires are very **rare** occurrences. This fundamental and disagreeable weakness of all pneumatic tires has been almost eliminated. **Blow-outs and rim-cuts are practically unknown.**

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who want to handle a tire built to give service and not to be cheap, should send for our proposition

Permanently Non-skid

OVERMAN TIRE COMPANY

1853 BROADWAY (at 61st Street) NEW YORK



New Departure Ball Bearings

Unexcelled—

American Made for American Trade

Materials—The best steel obtainable.

Manufacture — New England skill, well-known for excelling workmanship.

Finish — The finesse of modern accuracy.

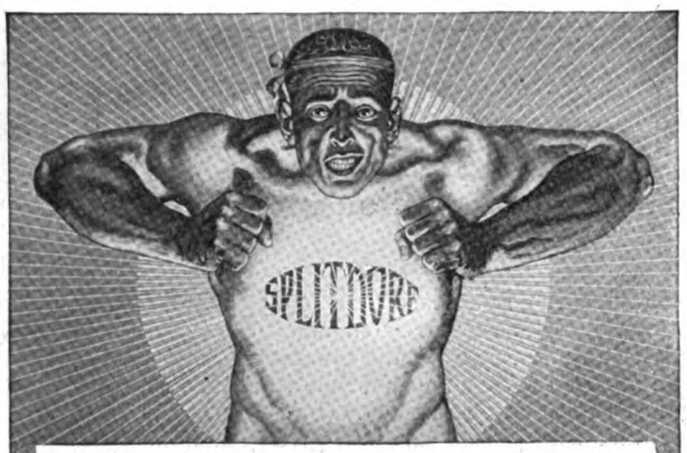
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Write us today regarding your requirements

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is a feature of SPLITDORF BRANCH HOUSES. We have an exchange proposition of the greatest interest to every owner of a gasoline motor who would save time and money. You can exchange ANY MAKE of magneto or, in fact, any ignition system throughout with us—low tension, dual, self-contained high tension systems, and coils and transformers—and save real money with our up-to-the-minute equipment.

Write or Call for "Exchange Details"

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CINCINNATI	811 Race St.	NEW YORK	18-20 W. 63d St.
DALLAS	402 S. Ervay St.	PHILADELPHIA,	210-212 N.13th St.
DAYTON	427 E. 3d St.	SAN FRANCISCO	1028 Geary St.
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REST after work is necessary to human endurance, and holidays are a wise economy. The Great Lakes of America offer more vacation opportunities than any other source in the country. The steamers of the Detroit and Cleveland Navigation Company, operating to all important ports, are unrivalled in point of elegance, comfort and quality of service—the perfect freedom offered by the saloon and promenade decks, the commodious state rooms, luxurious furnishings and excellence of cuisine make life aboard these floating palaces a solace to the weary mind and body.

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Daily service is operated between Detroit and Buffalo, Detroit and Cleveland; four trips weekly between Toledo, Detroit and Mackinac Island, the historic summer resort of the North Country; and from June 25 to Sept. 10 a special steamer, two trips weekly, will be in commission between Cleveland and Mackinac Island, stopping only at Detroit every trip. During July and August special daylight trips between Detroit and Cleveland. From June 10 to Sept. 10—daily service between Toledo and Put-In-Bay.

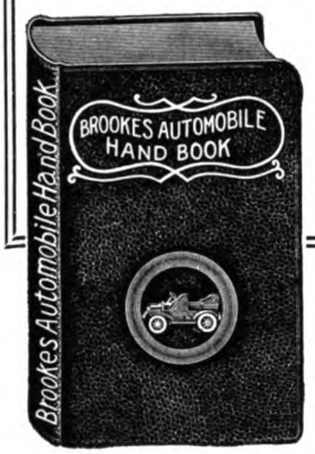
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Tickets reading via any rail line between Detroit and Buffalo, Detroit and Cleveland will be honored for transportation on D. & C. Line Steamers in either direction. Send 2 cent stamp for illustrated pamphlet and Great Lakes Map. Address L. G. Lewis, G. P. A., Detroit, Mich.

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And other experts.

A work of practical information for the use of

OWNERS
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AUTOMOBILE MECHANICS and TECHNICAL SCHOOLS

A strictly up-to-date treatise, dealing in a practical manner with all the various questions relating to the construction, care and operation of gasoline, electric and steam automobiles, including illustrated descriptions of the many different parts, together with clear and concise explanations of the principles governing their action. Correct methods are given for dealing with

Road Troubles, Motor Troubles Carburetor Troubles and Ignition Troubles

Also valuable information pertaining to ignition systems, carburetors, magnetos, etc., etc. Valve setting is dealt with in detail, also indicator work, with numerous tables, useful rules and formulas, diagrams, and over three hundred illustrations.

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231 West 39th Street New York

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Buyers to Share in Profits Lower Prices on Ford Cars

Effective from August 1, 1914, to August 1. 1915, and guaranteed against any reduction during that time:

Touring Car - - -	$490
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Town Car - - -	690

F. O. B. Detroit, all cars fully equipped.
(In the United States of America only)

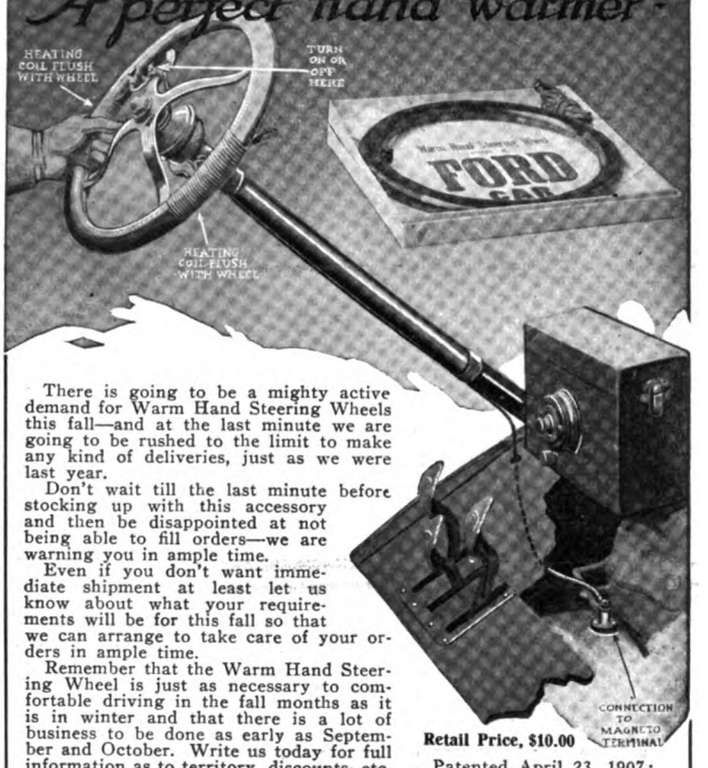
Further, we will be able to obtain the maximum efficiency in our factory production, and the minimum cost in our purchasing and sales departments if we can reach an output of 300,000 cars between the above dates.

And should we reach this production, we agree to pay as the buyer's share from $40 to $60 per car (on or about August 1, 1915) to every retail buyer who purchases a new Ford car between August 1, 1914, and August 1, 1915.

For further particulars regarding these low prices and profit-sharing plan, see the nearest Ford Branch or Dealer.

Ford Motor Company

For FORD Cars
A perfect hand warmer



There is going to be a mighty active demand for Warm Hand Steering Wheels this fall—and at the last minute we are going to be rushed to the limit to make any kind of deliveries, just as we were last year.

Don't wait till the last minute before stocking up with this accessory and then be disappointed at not being able to fill orders—we are warning you in ample time.

Even if you don't want immediate shipment at least let us know about what your requirements will be for this fall so that we can arrange to take care of your orders in ample time.

Remember that the Warm Hand Steering Wheel is just as necessary to comfortable driving in the fall months as it is in winter and that there is a lot of business to be done as early as September and October. Write us today for full information as to territory, discounts, etc.

Retail Price, $10.00

Patented April 23, 1907; Feb. 11, 1908; April 2, 1912. Other patents pending

The Warm Hand Steering Wheel Corp., Inc.
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The Hollenden
Cleveland

J·H·THOMPSON · · · · MANAGER

EUROPEAN PLAN
800 ROOMS

The Leading Hotel of America's "Sixth City"

Home of the Cleveland Automobile Club



The Owners of
Sanford
Motor Trucks

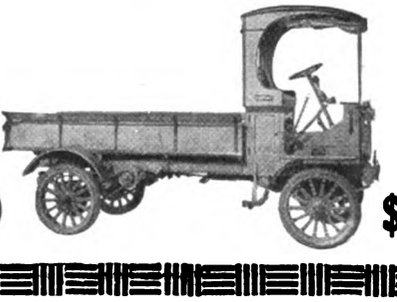
have tried them out under all climatic conditions; on country roads, in the extreme hilly sections of our country and the Far East, with always the same result:

Efficient, accessible, reliable, sturdy, well built, up to date TRUCKS.

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Note: Our new Price-Scale policy enables you to make "Customers" where heretofore you had only "Sales." Ask us *How!* Write for the "Lubrican," a booklet on lubrication to give to your trade.

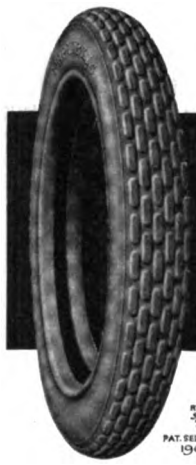
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"32" Touring Car, fully equipped	$1,050
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All prices F. O. B. Detroit

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Out Gears of Quality
Complete Differentials

N.P.R.H. NEW PROCESS GEAR CORPORATION N.P.R.H.
SYRACUSE, N.Y

The New Process Gear Corporation

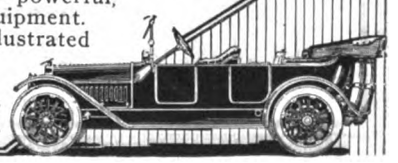
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Extra liberal wheel base, big wheels and tires, roomy tonneaus with luxurious upholstering — deep-pitched seats — powerful, flexible motor—full equipment. Write for beautifully illustrated catalog.



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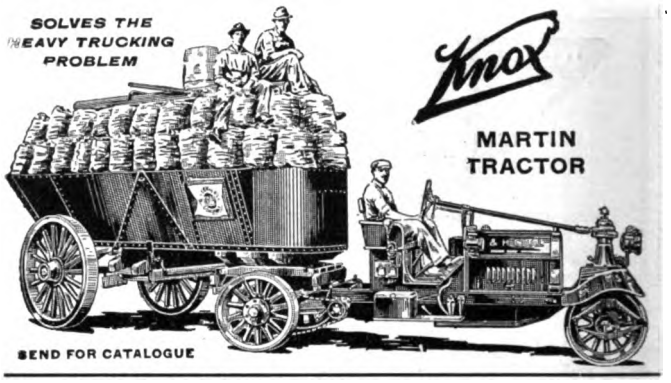
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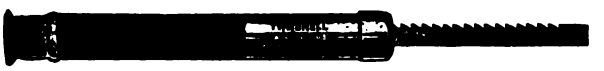
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THESE columns offer you an opportunity to appeal to an audience of 8,000 readers whose merchandising taste is being cultivated weekly to the highest degree by our articles on "Wide Awake Merchandising."

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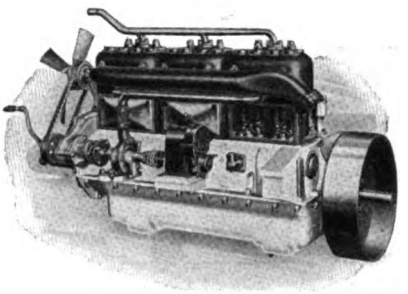
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Have Your Car ELECTRICALLY BOSCH throughout. Your magneto, your spark plugs, your lighting system and your starting system all guaranteed by one maker.

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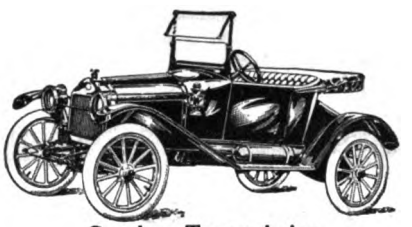
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WINNER OF THE GLIDDEN TOUR

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Gearless Transmission

Equipped Complete

Fore door body, extra thick tufted upholstery, plate glass rain-vision wind shield, left-hand drive with center control, 4-cylinder 22½ H.P. water-cooled motor, Bosch magneto, Prest-O-Lite tank, extension top, full elliptic springs, artillery wheels, best quality Goodrich clincher tires, 5 lamps, horn, pump, jack, tools. Speed, 50 miles per hour. Beats 'em all at climbing hills. Secure EXCLUSIVE SALE in your territory. Write for terms and catalog "B."

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"The Speedometer of Absolute Accuracy"
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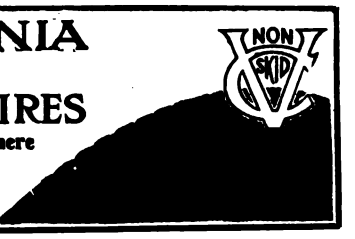
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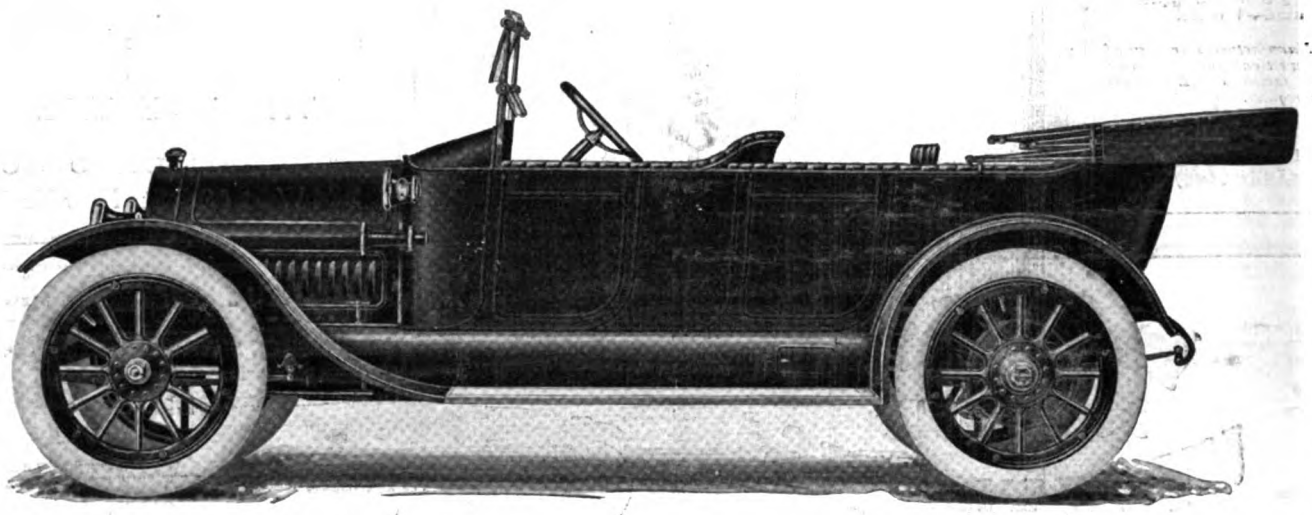


Pennsylvania Rubber Company
Jeannette, Penn.

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Lyons-Knight

for 1915



$2980 1915 Model K-4 for 7-Passengers

1915 Model K-4 for 5-Passengers **$2900**

The Most Important News in Motor World

Here is the most important news for every wise motor car dealer or buyer.

The new Lyons-Knight for 1915 is ready for delivery. The great institution behind this car—its many advanced features of design and construction—the wonderful records of these cars during the past year—all make this announcement of vital interest to both dealers and buyers.

Note These New Details

Notice the new taper line bodies—greater clearance under the rear axle—every detail of this car's appearance indicates its class—the peer of the $5,000 car.

Conveniences—See the unfailing and improved starting and lighting system, and the many other luxuries and refinements of added convenience. The one-man top if supplied with Jiffy curtains. A power tire pump adds even further convenience. The dealer or the buyer cannot afford to overlook these points which are so essential to genuine motoring pleasure.

Under the Hood—You don't have to be an engineer or a mechanic to see the wonderful design and construction of the 1915 Lyons-Knight engine. The first glance, after the hood is raised, will convince anyone that the Lyons-Knight is no ordinary engine. Its silent, smooth, powerful operation is guaranteed to give greater efficiency than any four or six cylinder poppet-valve engine of equal size. It also grows better and more economical with usage.

Riding Qualities—If it has been your privilege to ride in a Lyons-Knight, you have already been convinced that the delightful freedom from noise and vibration—the wonderful, quiet, smooth riding quality—brings a new meaning to motoring pleasure. This feature is the direct result of the Lyons-Knight engine combined with the silent, efficient worm drive.

Not only Lyons-Knight owners, but men who have owned and driven all kinds of American and European cars, voluntarily and emphatically proclaim that the quietness and the smooth-running qualities of the Lyons-Knight—over all kinds of roads—at all speeds—and under all conditions—are ***unequaled*** regardless of make or price.

Today—NOW!

The best months of the year remain before you. There's no use to wait—you will never find a better car to sell or to own than this. Get in touch with us now. Put the car to any test you choose. Take your own way to convince yourself of its value, but—

See The 1915 Lyons-Knight

Is This YOUR Opportunity?

The Lyons-Knight is already represented in most important cities from coast to coast. If there is no dealer in your town, ask us AT ONCE for our agency proposition. It is without exception the most liberal and the most profitable proposition ever offered by a reputable, established manufacturer.

It will pay YOU to act QUICKLY

LYONS-ATLAS COMPANY, Indianapolis, Indiana

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The Hand Klaxon $10

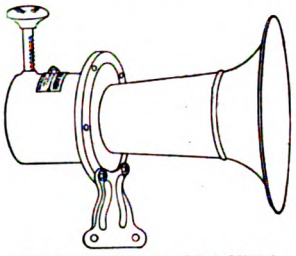
FOR MOTOR CARS

FOR MOTOR TRUCKS

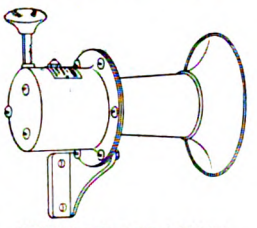
FOR MOTOR BOATS

FOR MOTOR CYCLES

You have sold Hand Klaxons to owners of pleasure cars—especially cars like the Ford that do not carry batteries nor generate their own current; but have you developed the motor truck field? Have you sold them to taxi-cab owners? Here are two important ways to increase your Klaxon business.

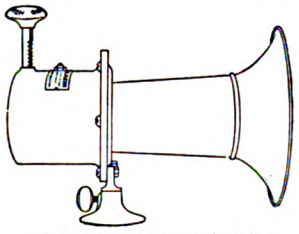


WITH REGULAR BRACKET



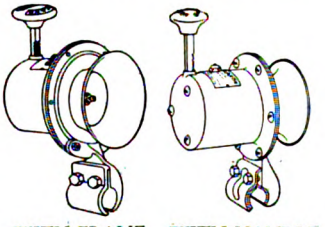
WITH SIDE BRACKET
For Motor Trucks and Taxi-Cabs

Also, have you sold Hand Klaxons to boat owners? The Klaxon note can be heard for two miles on the water. It penetrates fog. You can tell the exact direction from whence it comes.



WITH SWIVEL BRACKET
For Boats

Another important way to increase your Hand Klaxon sales is to sell them to owners of motor cycles. The Hand Klaxon gets the motorcyclist the same attention on the road as if he were driving an automobile.



WITH FRAME BRACKET

WITH HANDLE-BAR BRACKET

For Motorcycles

All Klaxons are guaranteed PERMANENTLY—and against anything that can happen to them.



KLAXONET

Lovell-McConnell Mfg Company Newark, N.J., U.S.A.

KLAXON

"The Public Safety Signal"



KLAXON

This advertisement planned, written and set up entirely in the Klaxon Factory. Type composition by the Klaxon Press with "Klaxon" type especially designed by Goudy.

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SPRINGFIELD CONVERTIBLE BODY

1915 Series

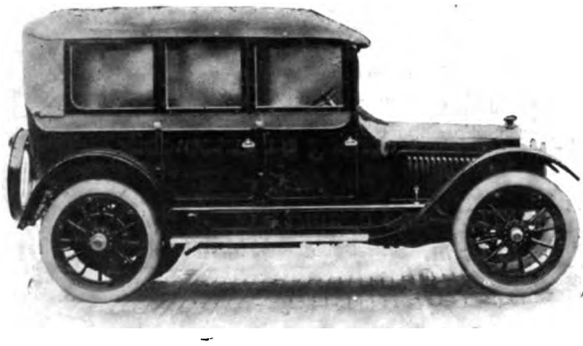
Convertible four door, seven passenger body - $1,300
Convertible four door, five passenger body - - 1,200
Convertible Sedan, four—five passenger body - - 800
Convertible Runabout, two passenger body - - 800

The incomparable utility and wide range of service which is practicable only with a car equipped with a SPRINGFIELD CONVERTIBLE BODY, takes on a new significance with the addition to our regular four door convertible type body of the new SPRINGFIELD CONVERTIBLE SEDAN.

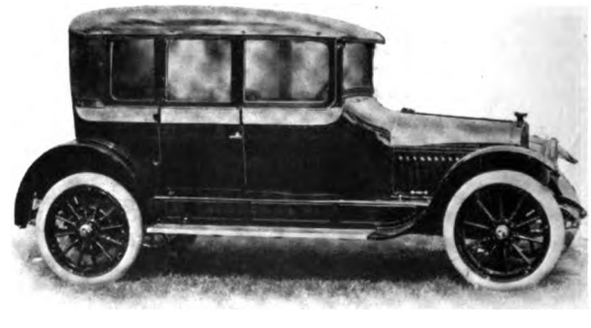
THE SPRINGFIELD CONVERTIBLE SEDAN BODY is designed for mounting on chassis of the Cadillac and Hudson type, and its price is consistent with the investment cars of that class involve. The regular four door SPRINGFIELD CONVERTIBLE BODY is, as in the past, better adapted for larger cars, such as the Packard, Pierce-Arrow, Simplex, Locomobile, Fiat, etc.

The refinements and improvements incorporated in the new SPRINGFIELD CONVERTIBLE BODIES, when considered in connection with the practical and economical advantages these bodies offer, make them more worthy of your consideration this year than ever before.

Photographs, descriptions and discounts will be mailed to reputable established dealers upon request.



Springfield Convertible 5 or 7 Passenger Body—Four Door Type



Springfield Convertible 4 or 5 Passenger Body—Sedan Type

The Springfield Metal Body Company

New York Branch
1737 Broadway

Springfield, Massachusetts

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MOTOR WORLD

A Trade Paper Giving the World's Motor News

Volume XL
No. 9

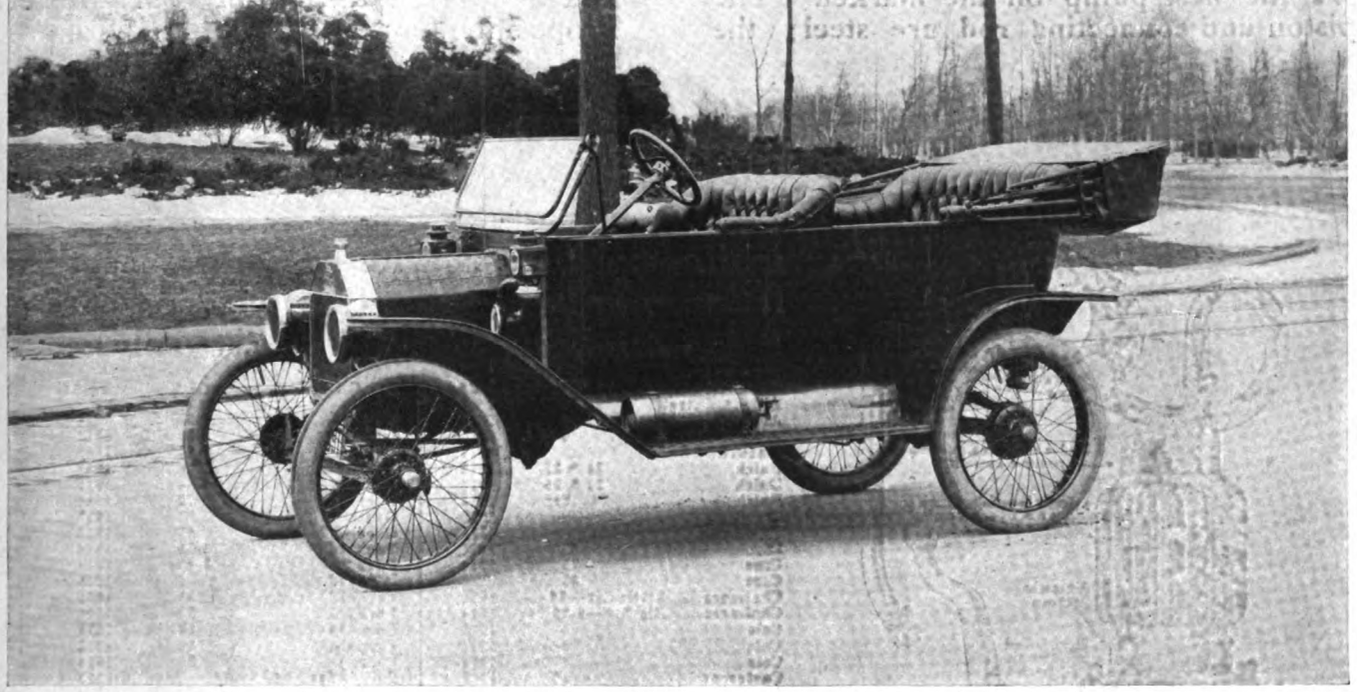
New York, August 26, 1914

Ten cents a copy
Two dollars a year

The Greatest Improvement at the Lowest Cost

STANWELD

WIRE WHEELS *for* FORD CARS



THERE is no better appearing light car than a Ford equipped with Stanweld Wire Wheels.

We've sold thousands of sets to owners in all parts of the United States. We charged $25 per set. And they were a mighty good value at that price.

But now increased production enables us to reduce the price to $20 for the plain clincher type, and to $27.50 for the quick-detachable rim type.

These prices put the best wire wheel equipment within the reach of every Ford owner.

At these prices every dealer in the United States should be able to sell a large percentage of the Ford owners in his territory. Every argument is at the dealer's command—a better-looking car, an easier-riding car, a lighter car, lower tire and gasoline expense. Get your sample set today.

NOW ONLY $20
Per Set of Four

The Standard Welding Company
Pioneers and the World's Largest Producers of Rims for Motor-Driven Vehicles
Main Office and Factory: CLEVELAND
Distributors in Principal Cities

Published Weekly by the Motor World Publishing Company, 231-241 West 39th St., New York

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Here's the Chance of the Year

THE biggest kind of an opportunity to sell a Stewart Tire Pump to every car owner near you. It goes right on the motor, and is operated by the motor. It starts at the pull of a little lever, and fills a big tire in less than five minutes.

It makes no difference what *car* you sell. By hooking up right now with the Stewart Tire Pump, you can get the big end of the pump business in your vicinity—and it's a mammoth and profitable business. All our dealers say so, and they are the livest and most up-and-doing dealers in their respective localities.

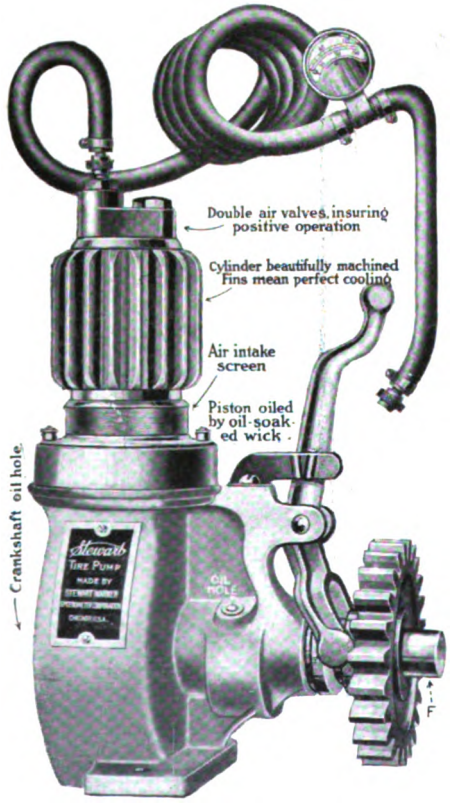
They've chosen the Stewart because it's the best pump on the market. The piston and connecting rod are steel; the base is aluminum; the cylinder is beautifully finished, with fins for perfect air cooling. Piston is oiled by rubbing against a wick upon which oil is dropped from outside. No rubber nor leather packings to wear and cause leakage. Price with air pressure gauge and 13 feet of high-grade hose, complete with bracket and gears to install on car, only . . . . .

$15

When ordering, give name, year and model of car the pump is wanted for.

Here's your chance. Don't let it slip away. Write today for our Dealers Proposition.

Stewart Tire Pump



with complete fittings for immediate installation, may be had for the following cars (this list is being added to almost daily):—

CAR	MODEL	YEAR
Abbott Detroit	35	1914
Abbott Detroit	44-50	1914
Abbott Detroit	6-Cyl.	1914
Auburn		1914
Buick	24 & 25	1913
Buick	24 & 25	1914
Buick	Big Six	1915
Cadillac		1913
Cadillac		1914
Case	40	1914
Case	25	1914
Case	35	
Chalmers	Little Six—26	1914
Chalmers	Big Six—6-60-24	1914
Cole	4-Cyl.	1913
Cole	6-Cyl.	1914
Cole	4-Cyl.	1914–15
Cartercar	5A	1913
Cartercar	5A	1914
Cartercar	7	1914
Ford		
Hudson	6-40	1914
Hudson	6-54	1914
Havers Six		1913
Jeffery	4	1914
Lexington Howard	4	1914
Lexington Howard	6	1914
Maxwell	25	1914
Maxwe'l	35	1914
Maxwell	6	1914
Mitchell	6	1913
Mitchell	Baby Six	1912

CAR	MODEL	YEAR
Oakland	35	1914
Oakland	6-60	1913–14
Oakland	42	1913
Oldsmobile	6	1914
Oldsmobile	42-4	1914
Overland	79	1914
Overland	71	1913
Overland	69	1913
Packard	1-38	1914
Packard	3-48	1914
Packard	30	1908
Packard	30	1909
Packard	30	1910
Packard	30	1911
Packard	30	1912
Paige	36	1914
Pathfinder		1913
Pathfinder		1914
Rambler	Cross Country	1913
Reo	The Fifth	1911
Reo	" "	1912
Reo	" "	1913
Reo	" "	1914
Studebaker (EMF)	4-30	1912
Flanders	4-20	1912
Studebaker	4 & 6 Cyl.	1913
Studebaker	4 & 6 Cyl.	1914
Westcott	4-40	1912
Westcott	4-40	1913
Westcott	0-30	1914
Westcott	0-30	1915

Stewart-Warner Speedometer Corporation

Executive Offices: 1958 Diversey Blvd., Chicago
Factories: Chicago and Beloit, Wisc.

17 Branches. Service Stations in all cities and large towns

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FISK
NON-SKID
TIRES

More Business For Dealers

Dealers: It will pay you to keep pace with our manufacturing progress.

Through extensive advertising in Saturday Evening Post, Collier's, Life and Literary Digest, we are sending thousands of users the message that we can now make prompt deliveries of Fisk Non-Skid Tires.

These users will buy! They have seen this attractive product and have wanted it, but for two years we have not been able to manufacture fast enough to meet their demands.

The Fisk Non-Skid will justify all the good you may say about it. In appearance, durability, traction and non-skidding qualities it has made a remarkable record on hundreds of cars. It adds a finishing touch which motorists are quick to appreciate.



Reg. U. S. Pat. Off.
Time to Re-Tire?
(Buy Fisk)

Be ready to get the business that is yours if you do your part. Be in a position promptly to fill orders. There may be dealers, not yet allied with Fisk, who recognize this season as a good time to take on our line. If so, write at once for particulars to Dept. 23.

THE FISK RUBBER COMPANY

Factory and Home Office **Chicopee Falls, Mass.**

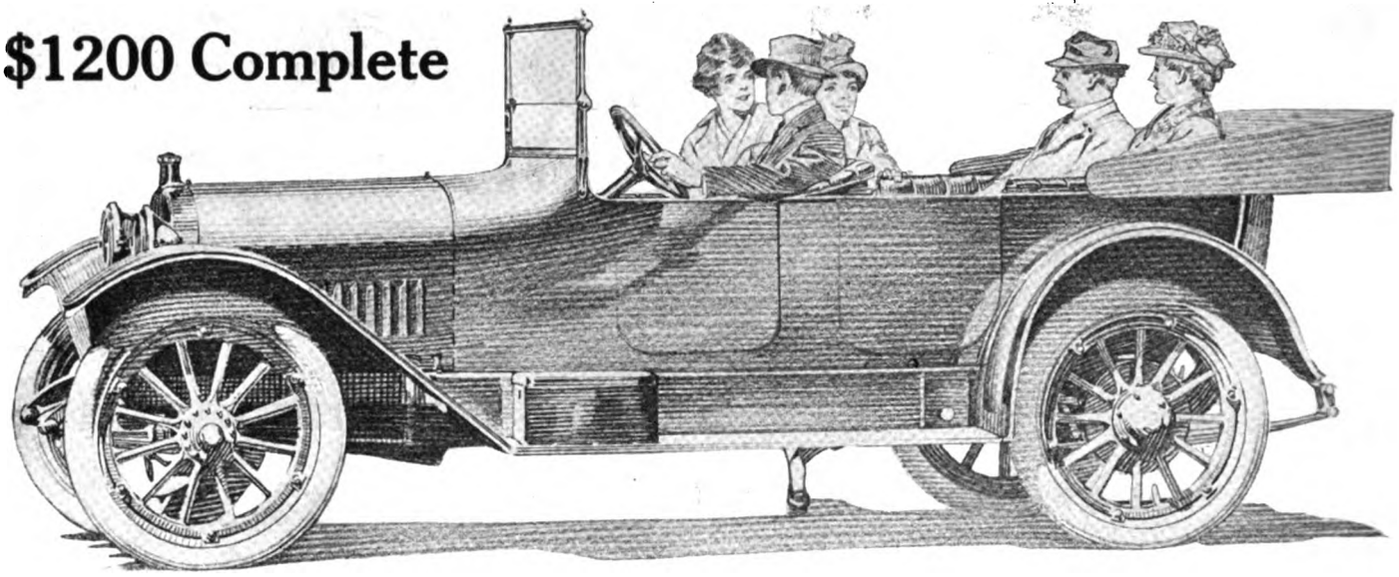
Fisk Branches in 43 Principal Cities

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1915 Hupmobile

Car of the American Family

$1200 Complete



For the third time the Hupp Motor Car Company has produced a car which, we believe, will prove immeasurably superior to any that assumes to compete with it.

The first Hupmobile "20" made for itself, and held against all rivalry, an immense following, at home and abroad.

The "32" put the Hupmobile into another class and surpassed the "20" in world-wide popularity.

This new Hupmobile bids fair to eclipse them both, as the very utmost a motorist can desire.

A highly specialized, individualized, Hupmobilized motor car which gives the buyer more service and comfort for his money, we believe, than he can find if he combs the market a dozen times over.

SPECIFICATIONS

More Power

Motor, 3⅜-inch bore by 5½-inch stroke; cylinders cast en bloc, with water jacket space between barrels; valves 1½-inch clear diameter, mushroom tappets, with special shape cams, very quiet; valve spring chamber closed by oil-tight cover, so that contacts are made in an oil bath. New shape combustion chamber, larger valves and larger cylinder bore produce more power. Multiple disc clutch, with thirteen 13-inch plates.

New Type Carburetor

Horizontal type bolted directly to cylinder block. Gas passage between cylinders, so that intake manifold is heated its entire length, assuring complete vaporization of even the heaviest gasolene.

Longer Wheelbase; More Room

Wheelbase, 119 inches; tires, 34 x 4 inches. Roomy 5-passenger body; 2 inches more leg-room in front, 7 inches more in tonneau; full tufted upholstery; concealed door hinges, flush handles. Front springs, 37 inches long, practically flat; rear springs, semi-elliptic, 52 inches long, swung under axle; springs self-oiling. Brakes, 14 inches in diameter.

Left Steer, Center Control

Steering wheel at left; gear change and hand brake levers at driver's right. Speedometer, starting and lighting switches mounted flush in center of cowl board. Speedometer drive from transmission.

Improved Oiling

A system already highly efficient made still better. Pressure feed from flywheel to main bearings and connecting rod bearings; cylinder walls lubricated by mist from crankshaft.

Modern Ignition

Ignition from storage battery, with automatic spark advance. Type rapidly being adopted by progressive engineers.

Single Unit Electrical System

Generator and starting motor combined, driven by silent chain from front end of crankshaft. Supplies current for starting, ignition and lighting. Makes motor non-stallable. Westinghouse 12-volt system.

Non-Glare, Dimmer Headlights

Hupmobile design. Upper half of headlight glass corrugated. Kills reflector glare, complying with many city ordinances and giving full illumination on road. One bulb in headlights, dimmed at will through resistance in switch. No side-lamps.

Equipment and Other Details

16-gallon gasolene tank in cowl; rain-vision windshield, fixed uprights, lower half adjustable for ventilation. One-man type top, attaching to windshield. Crowned fenders, with flat edge and without beading. Tail lamp exclusive Hupmobile design, illuminates license plate and entire width of road for considerable distance behind car. Non-skid tires on rear. Demountable rims, carrier at rear for spare rim and tire. Lighting and ignition switches controlled by Yale locks. Speedometer. Robe rail, foot rail and cocoa mat in tonneau. Color, blue-black with maroon running gear. Price F. O. B. Detroit.

Model 32

Complete with electric starter and lights, demountable rims, oversize tires, etc.	$1050
With regular equipment, not including electrical system	950

F. O. B. Detroit

HUPP MOTOR CAR COMPANY, 1254 Milwaukee Avenue, Detroit, Mich.

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We're making automobile tires, not promises. You know as well as we do that some day any tire will wear out. But to put that day off as far as possible we're making Kelly-Springfield Tubes and Tires of real rubber, by hand.



Kelly-Springfield Tire Company

Corner Broadway and 57th Street, New York

Branch offices in New York, Chicago, Philadelphia, Boston, St. Louis, Detroit, Cincinnati, San Francisco, Los Angeles, Cleveland, Seattle, Atlanta, Akron, O.

The Hearn Tire & Rubber Co., Columbus, O.
Bering Tire & Rubber Co., Houston, Texas
Boss Rubber Co., Denver, Colorado Springs and Pueblo
The Olmsted Co., Inc., Syracuse, N. Y.
Southern Hdwe. & Woodstock Co., Ltd., New Orleans, La.
L. J. Barth, Rochester, N. Y.
Seifert & Baine, Newark, N. J.
Atkinson Tire & Supply Co., Jacksonville, Fla.
Central Rubber & Supply Co., Indianapolis, Ind.
C. D. Franke & Co., Charleston, S. C.
K. & S. Auto Tire Co., Limited, Toronto, Can.
Todd Rubber Co., New Haven, Conn.
Barnard & Michael, Buffalo, N. Y.

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Overland

$1075

(Model 80)

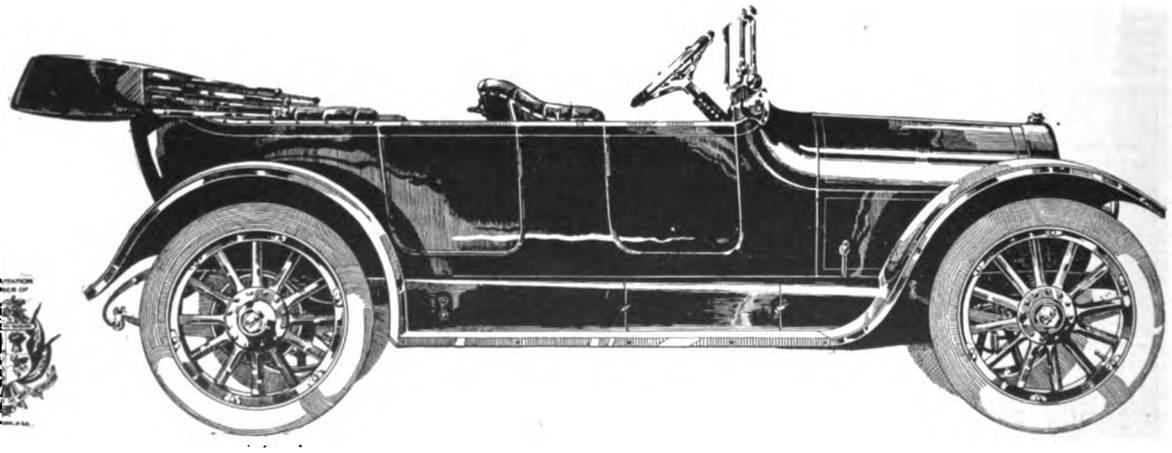
f. o. b. Toledo, Ohio

The Latest and Greatest Overland of All

Motor ; 35 h. p.
More economical
New full stream-line body
Tonneau ; longer and wider
Greater comfort
Instrument board in cowl dash
Individual front seats, high backs
Upholstery; deeper and softer
Windshield; rain-vision, ventilating type, built-in
Crowned fenders
Electric starter
Electric lights
Electric horn
All electric switches on steering column
High-tension magneto—no dry cells necessary
Thermo-syphon cooling—no pump needed
Five-bearing crankshaft
Rear-axle; floating type
Rear springs; extra long, and underslung, 3-4 elleptic
Easier riding
Wheel base ; 114 inches
Larger tires; 34 inch x 4 inch
Demountable rims—one extra
Left-hand drive
Center control
Body:—beautiful new Brewster green finish
Mohair top and boot
High-grade magnetic speedometer
Robe rail, foot rest and curtain box

Handsome 1915 catalogue on request. Please address Dept. 50.

The Willys-Overland Company, Toledo, Ohio



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MOTOR WORLD

Vol. XL New York, U. S. A., Wednesday, August 26, 1914 No. 9

DEALERS IN MILWAUKEE MAKE GAIN IN PAST YEAR

Increases Range from 50 to 250 Per Cent—Many Unable to Get Cars to Fill the Orders in Hand—Optimism Prevails.

With but few exceptions, Milwaukee motor car dealers did the largest bus iness in the history of the local industry during the period from August 1, 1913, to August 1, 1914. The increases range anywhere from 50 to 250 per cent, and in most instances would have been considerably larger but for the fact that dealers could not obtain all of the cars they were able to market. A shortage is reported by more than 85 per cent of the dealers.

Ford, of course, takes the lead, both in quantity of sales and percentage of increase. The Hickman-Lauson-Diener Co., Milwaukee, state agent, has disposed of 5,400 cars since October 1, 1913. Its fiscal year ends October 1, and there seems to be no doubt that the concern will make a 100 per cent increase over the corresponding period a year ago, when 3,000 cars were marketed.

Buick reports a 100 per cent increase in sales through the Milwaukee branch. M. J. Monson, manager, states that the 1914 allottment was sold out March 11, and no sub-dealer in the state has had a car to sell since May 1. What is more, the Milwaukee branch on August 1 had booked orders for 482 of the 1915 models.

A like situation is reported by the Reeke-Osmond Motor Car Co., Milwaukee, which handles most of Southern Wisconsin for the Thomas B. Jeffery Co., Kenosha. Business up to August 1, 1914, was 85 per cent better than for the preceding period, and up to this time the company has booked orders for more

(Continued on page 35.)

DRIVERS AND CARS THAT SURVIVED THE TWO DAYS' RACING

For the Elgin National Trophy

Driver and Car.	No. Cyl.	Bore and Stroke.	Disp.	Time.	M.P.H.
De Palma, Mercedes	4	3.7 x 6.3	271.5	4:06:18	73.53
Pullen, Mercer	4	3.75 x 6.75	298.2	4:07:28	73.17
Oldfield, Stutz	4	4.8125 x 6	436.6	4:24:02	68.59
Maurice, Sunbeam	6	3.15 x 6.25	292.5	4:31:09	66.78
Hearne, Burman Special	4	5.1 x 5.5	449.0	4:35:47	65.79

For the Chicago Automobile Cup

De Palma, Mercedes	4	4.75 x 5.5	389.9	4:05:01	73.91
Anderson, Stutz	4	4.8125 x 5.75	418.4	4:05:45	73.69
Mulford, Peugeot	4	3.94 x 7.09	345.0	4:08:16	72.94
Oldfield, Stutz	4	4.8125 x 6	436.6	4:15:23	70.91
Chandler, Braender Bulldog	4	4.3125 x 6	350.5	4:22:58	69.88
Heineman, Marmon	4	4.5 x 7	445.4	4:33:18	66.26
Dearborn, Stutz	4	4.75 x 5.5	389.9	4:37:29	65.23
Wilcox, Gray Fox	4	5.008 x 5.5	431.9	4:37:43	65.18

DE PALMA TWICE WINNER IN GRUELLING ELGIN STRUGGLES

Pushing His Mercedes Mount for New Records, Wily Italian Gives Exhibition of Remarkably Consistent Driving—Pullen, Mercer, Second in Elgin and Anderson, Stutz, Second in Chicago Cup.

RALPH DE PALMA, driving the German Mercedes in which Louis Wagner ran second in the French Grand Prix of 1914, won both the Chicago Automobile Club cup and the Elgin National trophy in the fifth annual Elgin road races, run Friday and Saturday of last week by the Chicago Automobile Club and the Elgin Automobile Road Race Association.

In both events the previous course record was broken and on the first day it looked for awhile as if the world's record would be broken, for Spencer Wishart in a Mercer was traveling at 80 miles an hour and only had 11 laps more to go when a leaky gasolene tank stopped him. De Palma won the first day's race at an average of 73.6 miles per hour for the 301 miles, beating Anderson's previous best of 71.5, while he demonstrated his consistency by coming back Saturday and repeating at 73.5 miles per hour, there being a difference of only 1 minute 18 seconds between the time of Friday's race and Saturday's, both being at the same distance.

But the brilliancy of this great road carnival is dimmed somewhat by the death of Spencer Wishart of the Mercer team, one of America's greatest drivers, who was killed in the race for the Elgin

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National trophy at a time when it looked as if he would break his spell of bad luck by winning the classic.

Beaten the first day when his gasolene tank sprung a leak, Wishart started out Saturday to redeem himself. Always a front-runner, he soon opened a gap on the field which looked to be a safe one. He finished the 13th lap and started down the backstretch at a furious pace. A mile from McLean's turn at the northeast corner of the course, he overtook Henning in No. 26 Mercer. Immediately ahead of him was a culvert and in a bend of the road and Wishart realized apparently that he would have to get there first.

Traveling at 100 miles an hour, he caught Henning but in attempting to pass, a rear hub cap hooked the front wheel of Henning's car. Wishart's Mercer immediately shot across the road in front of Henning, hit a post, ripped out 50 feet of fence, hit a tree and ricocheted to one side, turning over once, and finally turning turtle within 20 feet of a farm house. Wishart was still in the seat, but the mechanic was thrown out.

The car had brushed into a crowd of spectators and injured five of them. But

(Continued on page 10.)

COMMITTEES FOR NEW YEAR NAMED BY CHAMBER'S HEAD

President Charles Clifton of the National Automobile Chamber of Commerce has named committees for the coming year. With the exception of R. E. Olds, Reo, who takes the place vacated by S. N. Snyder, who resigned, all are reappointments. The committees follow, the first named in each case being the chairman:

Traffic—William E. Metzger (Argo); E. R. Benson (Studebaker); R. E. Olds (Reo).

Patents—C. C. Hanch (Marmon); William H. Van Dervoort (Moline); William T. White (White); Wilfred C. Leland (Cadillac).

Commercial Vehicle—Windsor T. White (White); Alvan Macauley (Packard); H. Kerr Thomas (Pierce).

Electric Vehicle—H. H. Rice (Waverley); F. R. White (Baker); W. C. Anderson (Anderson).

Good Roads—R. D. Chapin (Hudson); S. D. Waldon (Packard).

Legislative—H. H. Rice (Waverley); G. H. Stilwell (Franklin); J. I. Farley (Auburn).

Show—George Pope (Pope); H. O. Smith (Premier); Wilfred C. Leland (Cadillac).

VACUUM CUP TIRES MAKE GOOD SHOWING IN TESTS

One Tire Made 10,164 Miles—Others Exceed Company's Guarantee of 4,500 Miles—Two Kinds of Wheels Used.

At the conclusion of the test held for the Pennsylvania Rubber Co. by the Automobile Club of America to obtain information as to the relative merits of wood and wire wheels, 60,772 tire-miles had been covered, but little was actually determined except that the Pennsylvania Vacuum Cup tires used had excellent staying qualities. The test was held under the supervision of Laboratory Engineer Herbert Chase.

The test was commenced March 31, two Lozier fours being used, one having wire and the other wood wheels. The cars were run over roads in New York and vicinity until the tires were worn out. Nine tires were used, one of which is not considered in the official figures because it was used on both wood and wire wheels.

The tires on wood wheels made mileages of 5,700, 7,500, 8,940 and 10,164 miles, or an average of 8,078. The figures for the tires on wire wheels were 5,820, 4,300, 9,220 and 6,540 miles, an average of 6,107 miles. Tires were frequently changed from wheel to wheel, to equalize wear, but not from car to car.

Though apparently there is a margin in favor of the wood wheels, it is not what it seems, because the tires on the wire wheels were subject to accidents early in the test, causing them to blow out sooner than if they had been subjected only to ordinary wear. But two were actually worn out; one covered 10,164 and the other 9,228 miles. The former was on a wood and the latter on a wire wheel, but these two isolated cases offer no basis for accurate comparison.

The ninth tire was badly cut by a sharp stone at 1,040 miles and as a result blew out at 2,660 miles. This is the tire that was used on both wood- and wire-wheeled cars.

The Pennsylvania Rubber Co. entered the test with the idea of demonstrating that its guarantee of 4,500 miles is not too high. Including the odd tire, the total mileage was 60,784 miles, or an average of 6,754 miles per tire. The tires were purchased by the engineering department of the A. C. A. from different dealers throughout the country and were taken from regular stock. The hard, unyielding roads over which the tests were made doubtless hastened the ends of most of the tires, as stone cuts and bruises caused the blowing out of all but the two which wore out, the hard road surfaces pushing the stones into the tires much more than soft dirt roads would have done. The wire wheel car weighed 4,050 pounds and the wood wheel car 4,150 pounds with equipment and passengers.

Following is a summary of the results of the test:

Tire No.	Wheel.	Miles Traveled.	Cause of Elimination.
1	Wire	9,220	Worn out, never deflated.
2	Wood	8,940	Cut by sharp stone at 7,610 miles, blew out.
3	Wood	7,500	Bruised, blew out, never deflated.
4	Wire	6,540	Cut by sharp stone at 3,350 miles. Blew out at point of injury.
5	Both	2,660	Cut and bruised by sharp stone at 1,040 miles. Blew out at point of injury.
6	Wood	5,700	Punctured by screw at 3,290 miles. Blew out at point of injury.
7	Wire	4,300	Cut by sharp stone at 2,390 miles. Blew out at point of injury.
8	Wire	5,820	Cut at 5,690 miles. Blew out at point of injury.
9	Wood	10,164	Worn out, never deflated.
Total miles		60,784	

Average miles per tire, 6,754.

DIMMERS DECLARED ILLEGAL BY WASHINGTON AUTHORITIES

The new traffic regulations governing motor car drivers, which went into effect in Washington, D. C., on Saturday last, have been generally received with approval, with the exception of the provision which prohibits the use of brilliant head lamps. The authorities hold that cars equipped with brilliant head lamps cannot be used unless the glass is either painted or covered with cheesecloth or some similar material. The use of dimming apparatus is declared to be illegal.

By way of testing the provision which makes dimmers illegal, R. H. Martin, manager of the Buick Motor Co., submitted to arrest for driving his car with the head lamps dimmed with an attachment provided for the purpose. He was fined $10 and promptly appealed. Probably it will be several months before the case comes before the higher court, however. In the meantime the District commissioners are being so flooded with protests that it is likely the regulation concerning dimmers will be amended to make the use of these devices legal.

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CURB GASOLENE BUSINESS GROWS DURING PAST YEAR

Makes Greatest Strides in Middle West —Curb Apparatus Companies Report Large Increase in Their Sales.

The use of curb gasolene selling stations has made great strides during the past year. In a great many cases these curb pumps now are used by garages and dealers where heretofore it was necessary for the owner of a car to drive into a garage in order to replenish his fuel supply.

In response to inquiries, practically every maker of apparatus of this kind reports that sales for the first six months of the current year exceed those for the whole of last year.

The capacity of these sidewalk stations varies according to the location of the station and the city. The most popular size, however, is from 5 to 10 barrels capacity and the average cost to the dealer for an outfit of this kind is $225.

Although a number of these outfits have been placed in Eastern cities, such as Boston, New York and Philadelphia, the greatest demand comes from the West. Detroit and Cleveland already have well established chains of stations which do an extensive gasolene and oil business with the aid of curb pumps.

The S. F. Bowser Co., Fort Wayne, Ind., reports that the greatest demand for apparatus of this kind comes from Illinois cities and those in Wisconsin, and Indiana, Iowa and Minnesota. Up to date this company has sold approximately the same number of outfits as it sold during the whole of last year.

The American Oil Tank & Pump Co., Cincinnati, O., reports that there has been a large growth in the use of these curb stations during the past year, the demand coming from practically all over the country.

The Western Oil Pump & Tank Co., St. Louis, Mo., reports that during the first six months of the year its business in roadside filling outfits has been about 200 per cent greater than for the entire last year. Quite a number of outfits have been shipped to such cities in the South as Birmingham, Ala., New Orleans, La., and Savannah, Ga.; in fact, the greatest demand centers about the Southeast and the Northwest, Minneapolis, St. Paul, Portland, Ore., Spokane, Wash., and Montreal, Can., all taking large numbers.

In the comparatively small territory which it covers the Milwaukee Tank Works, Milwaukee, Wis., reports that its sales thus far this year are very gratifying, more than 1,600 outfits having been disposed of.

The Tokeim Mfg. Co., Cedar Rapids, Ia., reports that its curb post or roadside gasolene outfit is the most popular equipment it manufactures and that it is sold throughout the country. It is this company's experience, however, that the Central, Middle and Western states are very much advanced over the Eastern states in the installation of this equipment.

The Wayne Oil Tank & Pump Co., Fort Wayne, Ind., reports that its business in roadside gasolene stations will run this year 25 to 40 per cent above last year's sales, nearly 3,000 outfits having been disposed of thus far this year. The majority of the Wayne equipment has gone to territory east of the Mississippi, a considerable portion of it going direct to Detroit.

The Gilbert & Barker Mfg. Co., Springfield, Mass., reports that there does not seem to be any isolated demand for curb outfits but rather that the demand is fairly well spread out all over the United States. Both measuring and non-measuring outfits appear to be equally popular.

Broc Electric Moves To Saginaw.

The entire organization and equipment of the Broc Electric Vehicle Co., Cleveland, O., has been removed to Saginaw, Mich., owing to the recent consolidation of the company with the Argo Electric Co., of Saginaw, and the Borland-Grannis Co., of Chicago, Ill., into one concern known as the American Electric Car Co., with general heaa quarters in Saginaw. A service station has been established at 1976 East 66th street, Cleveland, in charge of H. C. Young, formerly with the Broc company.

Dallas Show Oct. 17-Nov. 1.

The Dallas (Tex.) Automobile Dealers' Association will hold a motor car show in conjunction with the state fair during the two weeks October 17 to November 1. The exhibits will be housed in a special building. D. F. Stafford, of the Overland Automobile Co., Dallas, is in charge of the show.

St. Louis Fall Show To Open Oct. 5.

The annual fall show of the St. Louis (Mo.) Manufacturers' & Dealers' Association is scheduled for the week of October 5. As usual it will be held in Forest Park Highlands.

TIRE SITUATION EASES UP AND SEVERAL PRICES FALL

Goodyear Leads in Decline—Empire and Two Others Follow—Crude Still Scarce But Its Price Declines.

The tire situation shows an appreciable easing up. Prices in several instances have fallen back to list and the present tendency is downward rather than upward.

Goodyear, which led the advance with 20 per cent, fell back to list Tuesday, August 18, with the explanation that it had secured means of obtaining crude rubber.

Empire followed August 20 by removing its advance of 12½ per cent, and the Mohawk company and the Miller Rubber, both of which had advanced 15 per cent, returned to the old list August 20.

Sterling has stated that it does not expect to advance.

The crude situation remains much as it was, according to Henderson & Korn, rubber brokers, New York city, with little immediate prospect of material relief. Some rubber has been received in this country from South America in Brazilian ships and some plantation grade has been received from London. The total, however, is negligible in comparison to what would ordinarily be received.

Para went to $1.12 and plantation to $1.10 immediately after the European war broke out, but these prices have fallen considerably. Para is now quoted at about 90 cents a pound and plantation at 75 to 80 cents, although there is little of either available. A small quantity of plantation from London sold as low as 72, but is not indicative of market conditions. Shipping and exchange, the prime causes of the shortage, show little improvement.

One hundred employes at the Hartford, Conn., plant of the United States Rubber Co., who were laid off when the war opened, have been taken back; the company expects an increase in business.

Olds Branch Now a Dealer.

The Pittsburgh, Pa., branch of the Olds Motor Works, Lansing, Mich., has been taken over by the Oldsmobile Co. of Pittsburgh, incorporated for the purpose by George S. Morrow and B. W. Lemmon, formerly manager and assistant manager, respectively, of the branch.

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PILGRIM LIGHT CAR WILL BE READY BY DECEMBER 1

New Company Secures Factory and Is Actively Preparing—Vehicle Will Sell at $650—Already Being Tested.

Preparations are well advanced for the manufacture of the Pilgrim, the latest addition to the light car class, which is to be placed on the market by the Pilgrim Motor Car Co., Detroit. The design is the work of W. H. Radford, formerly chief engineer of the Warren Motor Car Co., and previously connected with the engineering departments of the Olds Motor Works and the Hudson Motor Car Co. The concern, which is said to be financed by Eastern capital, all of which is subscribed, has chosen a factory location, has let material contracts and is assigning territory to agents; it is expected that deliveries will commence about December 1.

The machine, which will sell for $650 with electric lighting and starting and full equipment, is to be very light, weighing about 1,300 pounds with four-passenger touring body and all accessories. The first car has been on the road for some time, having already covered some 3,000 miles in testing-out work.

Power is provided by a block-cast four-cylinder motor of the L-head type with cylinders 3⅛ x 4, driving through a cone clutch, enclosed propeller shaft and three-speed gearset on the rear axle, which is of the semi-floating type. The generator is an Auto-Lite, working in conjunction with a Willard storage battery which furnishes ignition current through a Connecticut distributer. The starting unit question has not yet been definitely settled.

Standard parts are included in the design. The wheelbase is 100 inches and the tread 56. The body is of sheet steel, has ample room for four passengers, provides 28 inches of leg room in both compartments and has 18-inch doors. The wheels are of wire, demountable, and are fitted with 30 x 3 tires on interchangeable clincher rims. Fenders and runningboards are 9 inches wide and of pressed steel; the fenders are domed and follow the wheels closely.

Dodges Sue To Protect Name.

Dodge Bros. have filed a suit in the Circuit Court of Michigan against the Dodge Motor Car Co. to restrain the latter from using the name Dodge on its product, in its advertisements or in any matter concerning their business and its promotion.

It is claimed by Dodge Bros. that the officers and stockholders of the Dodge Motor Car Co.—Alvin M. Dodge, J. Moyer Leman, E. O. Millay, Edwin Herzog and George E. Sheldrich—are trying to profit by the name of Dodge Bros., which has existed for the last twelve years in Detroit, and whose business is so well established and known throughout the country.

J. Moyer Leman, of the Dodge Motor Car Co., when asked concerning the Dodge Bros. suit, said: "All we know about this suit is what we have read in the daily papers. No papers have been served on us as yet, and if they are we certainly will fight the case to the limit."

Many Changes in Saxon Agencies.

The Saxon Motor Co., Detroit, Mich., has taken over the business of its New York city agent, L. A. Van Patten, Inc., 251 West 57th street, making it a factory branch. The company expects to use the branch in developing the foreign trade as well as that in the New York territory. It has leased an upper floor of the building at 54th street and Broadway, where the A. Elliott Ranney Co. was located, for service purposes. It is to be known as the Saxon Motor Co. of New York.

The company has just arranged with the Liniger Implement Co. to replace the Stefart Too-Zer Co., Omaha, Neb., in the selling of Saxon cars. The Bond Motor Co. replaces the Saxon agency in Kansas City, Mo. The Essex Motor Car Co. now has the agency for the Saxon in Newark, N. J., and surrounding territory.

New York Division of E. V. A.

The New York Division of the Electric Vehicle Association of America was formed last week, the officers chosen being as follows: Harvey Robinson, chairman; David C. Fenner, vice-chairman, and David F. Tobias, secretary. These men, together with W. C. Andrews, T. C. Martin, S. W. Menefee, Nathaniel Platt, F. S. Sampson, F. W. Smith, C. G. Thomson, Charles A. Ward and C. Y. Kenworthy form the executive committee.

All told there are a dozen local divisions of the parent organization with a total membership of nearly 1,000. The new division, which has a membership of 200, is the largest one of the divisions of the association.

"COMING OUT" PARTY FOR NEW BUFFALO ELECTRIC

Buffalonians and Tradesmen Guests of Company at Demonstration Test and Luncheon—Speeches After Dinner.

For the purpose of formally announcing the new Buffalo electric, the Buffalo Electric Vehicle Co., Buffalo, N. Y., on Friday last entertained several of the more prominent citizens of Buffalo, together with representatives of the motor car and electric industries.

Starting from the offices of the company, the caravan made a trip of about 19 miles to the club house of the Buffalo Automobile Club, where luncheon was served. On the trip a stop was made on what is known as the Transit Hill—a hill of some length with an average grade of about 23 per cent—and practical demonstrations were made of the ability of the new car to climb the hill as well as demonstration of the fact that in going down hill it is unnecessary to use brakes other than the motor. The motor itself is used for all brake purposes, except bringing the car to a dead stop.

After the luncheon very brief addresses were made by A. G. Batchelder, Laurens Enos, A. A. Grey and Howard L. Spohn, covering the questions of the development of this product and also emphasizing the justification for the greatest general optimism at this time concerning business conditions.

After luncheon more demonstrations of the mileage capacity and speed of the cars were given. The entire party retired to the Buffalo Club, where a banquet was held.

Following is a partial list of those in attendance: A. G. Batchelder, chairman executive board A. A. A.; J. P. Mallett, engineer, Society for Electrical Development; Howard Spohn, Class Journal Co.; Dai H. Lewis, secretary Automobile Club of Buffalo; M. M. Wall, president Buffalo Automobile Club; Richard O'Keefe, secretary Buffalo Chamber of Commerce; H. B. Niblette, the B. F. Goodrich Co.; W. F. Fuqua, W. F. Fuqua & Co., bankers, Philadelphia, Pa.; Laurens Enos, ex-president A. A. A.; John T. Steele, organizer, Buffalo Electric Vehicle Co.; E. E. Denniston, general manager Buffalo Electric Vehicle Co.; W. A. Zimmerman, sales manager Buffalo Electric Vehicle Co.; F. G. Peck, engineer, Buffalo Electric Vehicle Co.

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The Tires at Elgin

The winning and second cars in the Elgin National road race, run Saturday, August 22, over the 8-mile course, made the 301 miles at a speed of more than 73 miles an hour without making a single tire change.

This was over a country road with two right-angle corners and two other turns which are rounded off but not banked. The majority of the drivers described the road surface as rough; not wavy, but with the crust of the road broken away in places, leaving holes an inch or more deep.

Tires must be getting much better when they will perform this way; or, if this is not so, our cars must be much better balanced and our drivers must be much more expert in handling their machines and in saving the tires.

A few years ago it was unthinkable that a car could win a long-distance road race without changing tires many times. In those days it was the accepted saying that "tires won or lost the race." Today the tire factor has been nearly eliminated, providing the car and driver are tuned to the minute in the work.

Three Tire-Life Factors

Three factors enter into tire life: First, the tire itself, coupled with inflation and proper fitting to the rim; second, the car, its weight balance over front and rear wheels, the proper aligning of front and rear wheels, as well as the correct relation of car weight to tire size; third, the driver, his ability to steer the car properly, to pick out the best road surface, to take the corners at the best speeds, to apply the brakes properly and to accelerate properly.

If these three factors are properly combined it would seem that tire life can be greatly increased; in fact, as one driver expressed it, "tire life might be doubled and trebled if these three factors were given every consideration."

But this is not all of the Elgin tire story. Besides De Palma in his Mercedes on Nassau tires and Pullen in his Mercer on Silvertown Cord tires, finishing first and second respectively in Saturday's race, there were two most creditable performances in Friday's race, when Oldfield in a Stutz and Dearborn, driving another Stutz, completed the 301 miles without a single change of their Firestone tires. This points to the possibilities of increasing tire mileage.

In Every-Day Work

What can be accomplished in a great race can be achieved so much more easily in regular work. Dealers can do much to cut down their own tire expense, and they can do an immense work in adding to the tire mileage of their customers' cars.

How can this be done? asks Mr. Dealer from Missouri. There are many ways, and here are three examples of how tires have been allowed to wear out:

First: A car owner had experienced trouble with his front tires for a whole season. He sent the car to the dealer's repair-shop four times to see if the front wheels were properly aligned with the rear wheels. Each time the dealer declared they were correct. Finally the tire maker rebelled, sent the car to another repair-shop and found the wheels to be out 1.75 inches.

THE DEALER HAD INADEQUATE HELP; IT IS QUESTIONABLE IF HIS FORCE ACTUALLY KNEW HOW TO LINE UP FRONT AND REAR WHEELS.

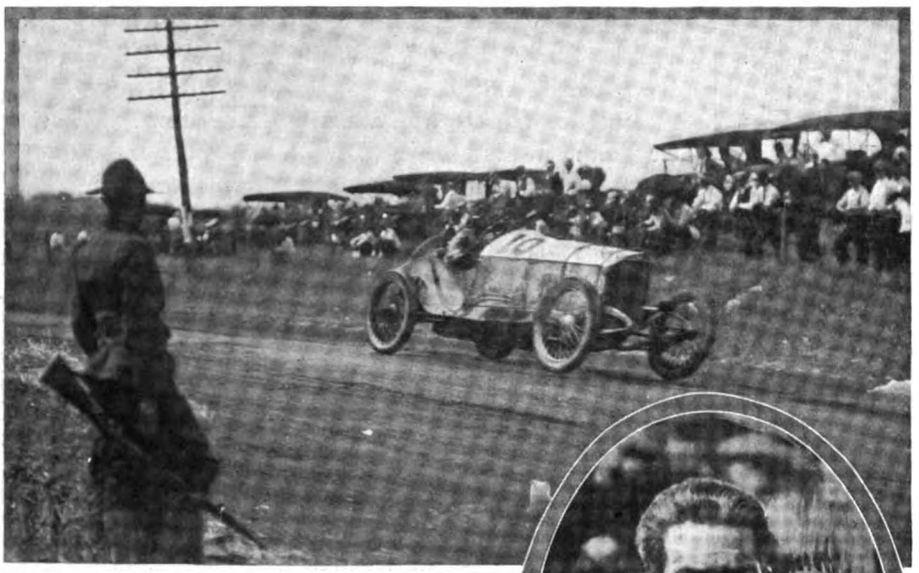
Incompetent Repairing

Second: An owner broke the cross rod connecting the steering knuckles. The dealer repaired it, and the owner, before taking the car out, drew attention to the fact that the front wheels seemed a little out of line. The dealer asserted otherwise. The owner states that in driving 20 miles at a pace around 30 to 35 miles per hour on hard roads he ground the tread on the front tires to such an extent that one was nearly worn out and blew out a few miles later.

Third: Here is an example of how rear wheels, by not being correctly aligned, caused trouble. For more than two seasons the rear tires had blown out and worn out too soon. The tire makers studied the situation but without satisfactory results. Finally it was discovered that one of the rear springs was longer than the other and that the radius rod adjustment was such that the rear wheels were not correctly aligned. There was always a sidewise tendency when the car bounced on the road and this movement wore off the tire and caused bursting.

Many other cases of carelessness on the part of dealers could be cited, all of which go to prove that the dealer can do much by careful repair work and watching of the car to lengthen tire life.

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De Palma and his Mercedes alone and going great guns on Butten's Hill. The course guards were really armed

De Palma Is Dual Winner

Consistent Driving Smashes All Records—Wishart Is Killed.

(Continued from page 6.)

the racing men were the greatest sufferers. Wishart's chest was crushed, a leg broken and he was injured internally. Both he and his mechanic were rushed to the St. Joseph's hospital in Elgin, but Wishart lived only long enough for Mrs. Wishart to reach his bedside. Jack Genter, the mechanic, was badly injured but he still was alive up to today, although his chances of recovery are said to be slim.

Successful Racing Program.

From a racing viewpoint, though, the meet was a great success. On both days the attendance was a record-breaker; the largest field of entries ever secured for an American road race started; the weather was of the best and the promoters will be able to show a fair profit.

The meet was remarkable for the introduction of the two-car start as used in the French Grand Prix, and the Pendleton scoreboard made its Eastern debut. Starter Wagner sent the contestants away in pairs without a hitch, a broad white line of the tape to Hornbeek's turn making two lanes. Each car had to stay in its own lane until the turn was reached.



DE PALMA, ELGIN HERO

The Pendleton scoreboard, designed by E. H. Pendleton, of Los Angeles, recorded the exact position of each car at each mile of the course, and as soon as a car finished a lap, the lap number also was posted. This information was secured by means of a telephone system around the course, one at each mile. Girl operators were used, each telephoning when a car passed her station.

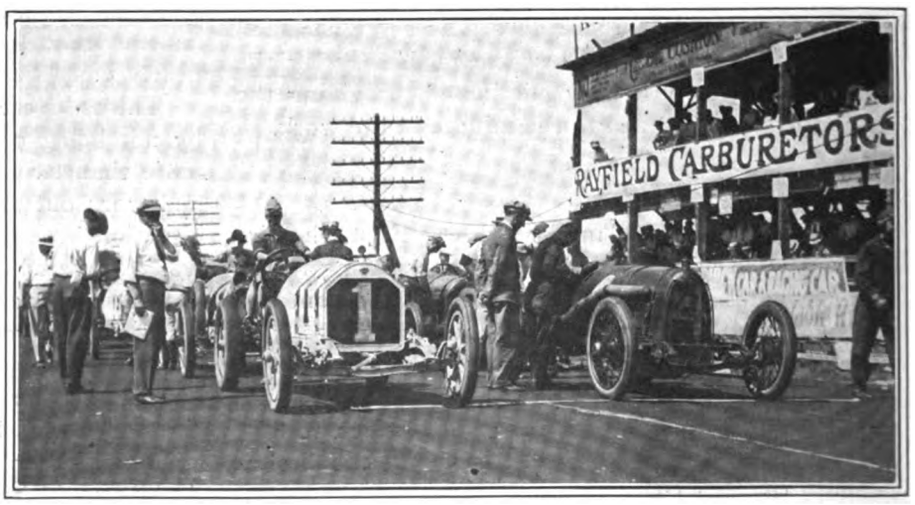
The first day's race for the Chicago Automobile Club trophy was for cars of 450 inches piston displacement and under. It brought to the tape 20 cars, Burman's Peugeot, Stringer's Marmon, D'Alene's Marmon, Callaghan's Keeton and No. 23 Maxwell being scratched. In this event Wishart was the dominating factor for 25 of the 36 laps. Gaining the front almost at the start, he had opened a gap of 9 minutes 40 seconds at the 25th lap when the vibration broke the support of his gasolene tank. His mechanic tried to hold the tank in place but after a couple of laps Wishart gave up and retired.

Close Finish First Day.

This left it clear sailing for De Palma in the Mercedes and Anderson in the Stutz, who settled down to a battle royal for the rest of the journey. It was a desperate fight, the lead fluctuating often. At the end, though, De Palma had the edge by 44 seconds but the last lap saw interest keyed up to the last notch, De Palma gaining the laurel wreath. The victor made only three stops. One was for supplies; a second was to change a tire in the backstretch and the third was to take on a new tire at the pits.

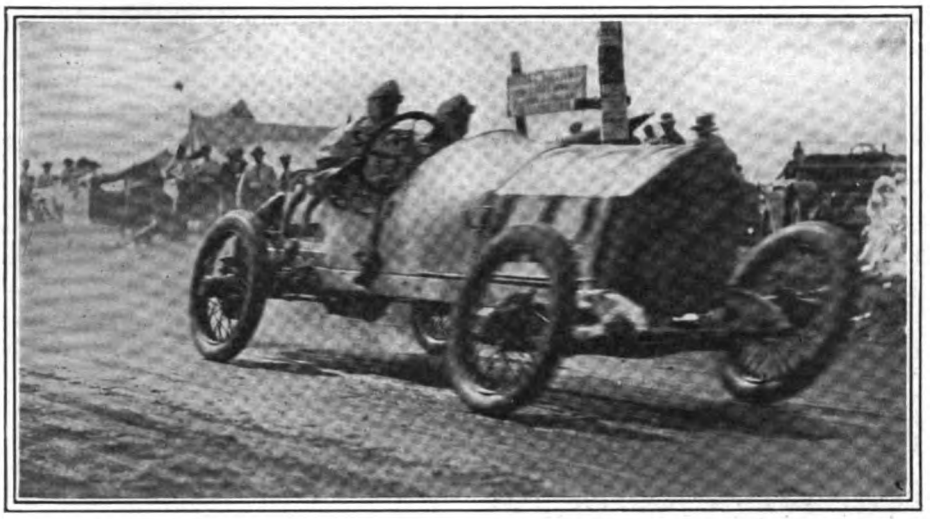
Anderson's defeat was largely caused by delay in the backstretch when he stopped several minutes to pick up his two spare tires which broke loose from their moorings. Anderson feared that he would be disqualified unless he carried the spares, whereas this is not in the rules. Had he left the tires by the roadside and picked up new ones at the pits it might have been a different story.

Although beaten by De Palma and the Mercedes, still the Stutz company had cause to be jubilant, for it made an enviable record. All three of its cars finished and the hood never was lifted on one of them. Anderson changed only one tire, while Oldfield and Dearborn, the latter driving the private entry of



The cars in both races were started in pairs at 30-second intervals. The white line on the course divided it into two alleys, one for each car

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Anderson with his Stutz wide open just after passing the stands; he finished second the first day though he lost time going back for spare wheels he dropped

William Ziegler, went through without a change.

The race for the Eigin National trophy the second day might well be classed as one of America's greatest road battles. In the first place it brought out the largest field that ever lined up before Starter Fred Wagner, and although it was slower throughout than the previous day's battle, still this was more than made up by the seesawing of the leaders.

As usual, Wishart went out in front, but this time he did not open so big a gap, while thundering at his heels were Pullen in the Mercer, Burman in the Peugeot, Alley in the Duesenberg and De Palma in the Mercedes. The winner of Friday's race was back in the ruck for a considerable distance and it was the elimination of those in front of him that gave him his opportunity to become the dual winner.

It was a ding-dong battle at this stage of the race. Any one of four cars could win. Burman, though, quit with only a lap and a half to go when the weak cylinder went wrong.

De Palma Always Close Winner.

For the second time at the meet De Palma went into the last lap with only a slight advantage. Pullen, who went through the entire race without a stop, was dogging his heels, ready to take advantage of any slip, and had a fighting chance all the way the last lap. De Palma, however, maintained his advantage and went over the line with a margin of 1 minute 10 seconds over Pullen. The performance of the latter driver was remarkable indeed. In a much smaller car than Pullen's, he always was a factor and went through the entire race without a stop.

Third in this race was the veteran Barney Oldfield, who was fourth in Friday's race and who was remarkably consistent in both events. Gaston Maurice,



Bob Burman at the wheel of the Peugeot Goux drove at Indianapolis

in the Sunbeam, ran fourth. Eddie Hearne, in the Burman Special, was the last to get the checkered flag, being placed fifth. Also running at the finish were Carlson in the Maxwell and Henning in the Mercer.

The fastest lap the first day was 6:11, a mark at which two tied—Wishart and Mulford. Hung up for this was a $200 purse given by Martin J. Kavanaugh of the Chicago Automobile Club. On the second day Wishart carried off the honor with 6:20⅗, made on his second lap.

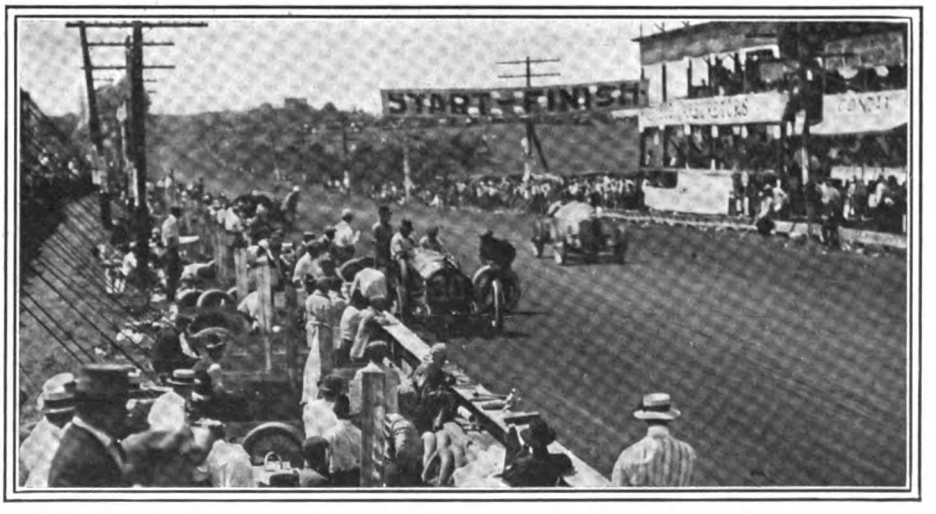
De Palma won $4,400 in all—$2,000 for each first and $400 from the Rudge-Whitworth company for using their wire wheels. Pullen gets $800, which includes the Rudge-Whitworth $100 for second place. Anderson lands $700 for second the first day; Mulford, third the first day, picks up $300 for first and divides the Kavanaugh prize. Oldfield won $300 for being third the second day. Wishart's winnings included the $200 for Saturday's fastest lap, given by Harry Visser-ing, president of the Chicago Automobile Club.

First Day's Race Story in Detail

Leaky Tank Puts Wishart Out—Anderson Finishes Second.

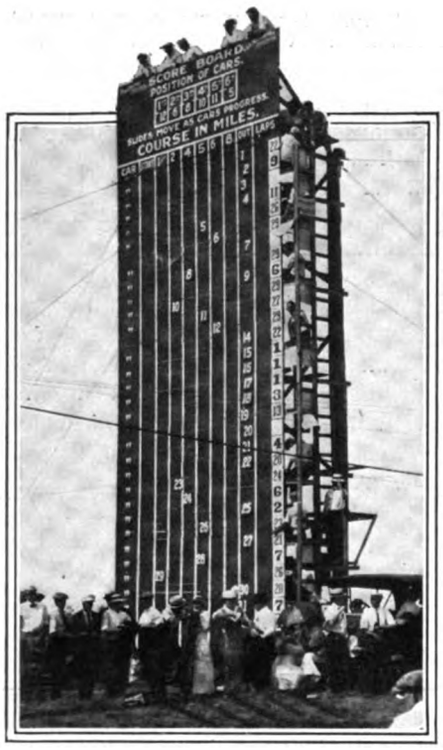
Twenty drivers and cars lined up on Friday in front of the expectant grandstand in 10 rows of 2 each to battle for the Chicago Automobile Club cup. They faced the starter in this order:

Dearborn's Stutz; Tetzlaff's Maxwell. Pullen's Mercer; Rickenbacher's Duesenberg.



With few exceptions the pit work of the various crews was disappointing; tire and wheel changes were slowly made and team-work seemed entirely lacking

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Pendleton scoreboard at the grandstand. White figures at right edge show positions of cars when picture was taken; vertical columns show their positions around the course

De Palma's Mercedes; Oldfield's Stutz.
Grant's Sunbeam; Alley's Duesenberg.
Tidmarsh's Great Western; Schrunk's White.
Wishart's Mercer; Mulford's Peugeot.
Roberts's Pahys; Anderson's Stutz.
Carlson's Maxwell; Henning's Mercer.
Wilcox's Gray Fox; Maurice's Sunbeam.
Heineman's Marmon; Chandler's Braender Bulldog.

Six cars that were nominated for the race were withdrawn. Bob Burman was a spectator, his Peugeot having sustained a broken cylinder the day before. Mel Stringer, slated to drive the No. 7 Marmon, remained in the pits with his arm in a sling and his car in the garage, wrecked by a spill in practice. The No. 18 Marmon was another absentee, being ruled out by the technical committee because its piston displacement exceeded 450 cubic inches. No reason was given for the withdrawal of the No. 23 Maxwell and the No. 32 Keeton. The No. 33 Peugeot was far from the scene of the struggle, its owner, E. J. Schroeder, refusing to ship it from New York on hearing that De Palma would not drive it.

Cars Despatched in Pairs.

At intervals of 30 seconds the cars were dispatched, Heineman and Chandler having their gears in mesh 5 minutes after the first two cars shot over the starting line.

Tetzlaff's Maxwell was the first to complete the first lap.

The Great Western, driven by Tidmarsh, failed to complete even one lap, engine trouble eliminating it before the motor was fairly warmed up to its task.

Mulford's Peugeot led on corrected time, having reeled off the first 8.38 miles in 6 minutes and 27 seconds. Wishart's time was but 2 seconds slower. It early became evident that all records for the Elgin course would undoubtedly be shattered.

On the next circuit of the course, De Palma passed Mulford, Pullen and Duesenberg and went to the front as pacemaker.

In fact, Wishart was not to be denied the honor of showing the way to the field. Although De Palma was first across the tape at the end of the third lap, he was second on corrected time, for Wishart's circuit in 6 minutes and 13 seconds had given him the lead. On the next two laps, he overtook the Italian and showed in front at the completion of 41 miles.

Two cars were eliminated after mak-



Hearne drove his Burman Special consistently, finishing fourth the second day

RECORD BY LAPS OF THE CARS THAT COMPETED FOR THE CH

No.	Car	Driver	Lap	1 8 Miles 2030 Ft.	2 16 Miles 4060 Ft.	3 25 Miles 810 Ft.	4 33 Miles 2840 Ft.	5 41 Miles 4870 Ft.	6 50 Miles 1620 Ft.	7 58 Miles 3650 Ft.	8 67 Miles 400 Ft.	9 75 Miles 2430 Ft.	10 83 Miles 4460 Ft.	11 92 Miles 1210 Ft.	12 100 Miles 3240 Ft.	13 108 Miles 5270 Ft.	14 117 Miles 2020 Ft.	15 125 Miles 2050 Ft.	16 134 Miles 800 Ft.	17 142 Miles 2830 Ft.
10	Mercedes	R. DePalma	Elaps.	6:42	13:15	19:44	26:18	33:02	39:40	46:13	52:51	59:33	1:06:12	1:12:53	1:19:36	1:26:14	1:32:59	1:39:37	1:46:19	1:54:10
			Lap.	6:42	6:33	6:29	6:34	6:44	6:38	6:33	6:38	6:42	6:39	6:41	6:43	6:38	6:45	6:38	6:42	7:51
22	Stutz	G. Anderson	Elaps.	6:52	13:31	20:14	29:55	36:38	43:19	50:02	56:35	1:03:11	1:09:45	1:16:23	1:22:50	1:29:24	1:36:01	1:42:41	1:49:21	1:56:08
			Lap.		6:39	6:33	9:41	6:43	6:41	6:43	6:33	6:36	6:34	6:38	6:27	6:34	6:37	6:40	6:40	6:47
6	Peugeot	R. Mulford	Elaps.	6:27	13:11	23:15	30:50	37:28	44:19	51:06	57:51	1:04:24	1:11:06	1:17:33	1:24:05	1:30:35	1:36:59	1:43:25	1:50:02	1:56:02
			Lap.		6:44	10:04	7:35	6:38	6:51	6:47	6:45	6:33	6:42	6:27	6:32	6:30	6:24	6:26	6:37	9:00
11	Stutz	B. Oldfield	Elaps.	7:12	14:12	21:12	28:25	35:36	42:47	49:51	56:59	1:04:10	1:11:17	1:18:18	1:25:19	1:32:23	1:39:27	1:46:25	1:53:25	2:00:18
			Lap.		7:00	7:00	7:13	7:11	7:11	7:04	7:08	7:10	7:07	7:01	7:01	7:04	7:04	6:58	7:00	6:53
31	Braender-Bulldog	W. Chandler	Elaps.	7:23	14:18	21:42	30:51	37:40	44:28	51:20	58:17	1:05:04	1:11:58	1:18:40	1:25:30	1:32:20	1:39:04	1:45:47	1:52:32	1:59:11
			Lap.		6:55	7:24	9:09	6:49	6:48	6:52	6:57	6:47	6:54	6:42	6:50	6:50	7:16	6:43	6:45	6:39
30	Marmon	L. Heinemann	Elaps.	7:15	14:10	22:16	27:02	35:47	42:30	52:54	59:40	1:06:32	1:13:23	1:20:47	1:32:10	1:38:45	1:45:30	1:52:44	2:02:33	2:09:43
			Lap.		6:55	8:06	6:46	6:45	6:43	10:24	6:46	6:52	6:51	7:24	11:23	6:35	6:45	7:14	9:49	7:10
1	Stutz	F. H. Dearborn	Elaps.	8:10	15:12	22:40	30:07	37:30	44:59	52:25	59:47	1:07:11	1:14:45	1:22:08	1:29:38	1:37:05	1:44:26	1:51:45	1:59:42	2:15:44
			Lap.		7:02	7:18	7:27	7:23	7:29	7:26	7:22	7:24	7:34	7:23	7:30	7:27	7:21	7:19	7:57	16:02
27	Gray Fox	H. Wilcox	Elaps.	7:06	13:51	20:37	27:25	34:16	41:02	48:01	54:47	1:01:40	1:08:29	1:15:18	1:21:58	1:28:37	1:35:21	1:42:20	1:49:18	1:55:56
			Lap.		6:45	6:46	6:48	6:51	6:46	6:59	6:46	6:53	6:49	6:49	6:40	6:39	6:44	6:59	6:58	6:38
17	White	W. J. Schrunk	Elaps.	19:04	28:12	43:34	52:45	1:01:27	1:10:04	1:19:15	1:27:42	1:36:29	1:48:36	1:57:25	2:07:20	2:14:54	2:23:38	2:32:14	2:40:52	2:49:27
			Lap.		9:08	15:22	9:11	8:42	8:37	9:11	8:27	8:47	12:07	8:49	9:55	7:34	8:44	8:36	8:38	8:35
19	Mercer	S. Wishart	Elaps.	6:31	12:42	18:55	25:08	31:23	37:40	43:55	50:14	56:29	1:02:49	1:09:07	1:15:23	1:21:40	1:27:56	1:34:11	1:40:29	1:46:49
			Lap.		6:11	6:13	6:13	6:15	6:17	6:15	6:19	6:15	6:20	6:18	6:16	6:17	6:16	6:15	6:18	6:20
21	Pahys	M. Roberts	Elaps.	7:37	14:44	21:59	29:32	41:46	49:35	1:02:52	1:10:28	1:19:45	1:27:23	1:34:57	1:42:32	1:50:07	1:57:46	2:05:10	2:13:04	2:20:41
			Lap.		7:07	7:15	7:33	12:14	7:49	13:17	7:36	9:17	7:38	7:34	7:35	7:35	7:39	7:24	7:54	7:37
26	Mercer	Henning	Elaps.	7:39	15:08	22:45	30:22	37:51	45:18	52:47	1:01:24	1:09:10	1:16:37	1:24:07	1:31:37	1:39:26	1:46:55	1:53:44	2:01:45	2:09:10
			Lap.		7:29	7:37	7:37	7:29	7:27	7:29	8:37	7:46	7:27	7:30	7:30	7:49	7:29	6:49	8:01	7:25
12	Duesenberg	Tom Alley	Elaps.	8:43	15:36	22:19	29:03	35:57	42:38	49:20	56:03	1:03:15	1:10:01	1:16:48	1:23:37	1:33:13	Out—	broken	gearset	
			Lap.		6:53	6:43	6:44	6:54	6:41	6:42	6:43	7:12	6:46	6:47	6:49	9:36				
24	Maxwell	W. Carlson	Elaps.	7:43	15:12	22:44	30:11	37:26	45:25	58:02	1:05:23	1:12:59	1:20:55	1:28:16	1:36:45	1:54:10	Out—	broken	internall y	
			Lap.		7:29	7:32	7:27	7:15	7:59	12:37	7:21	7:36	7:56	7:21	8:29	7:25				
29	Sunbeam	G. Maurice	Elaps.	8:00	15:46	23:36	31:20	38:59	46:27	54:15	1:01:59	1:27:35	1:35:46	1:43:20	Ignition	trouble				
			Lap.		7:46	7:50	7:44	7:39	7:28	7:48	7:44	25:36	8:11	7:34						
8	Mercer	E. Pullen	Elaps	7:10	14:01	20:48	27:35	34:23	41:05	47:54	54:39	1:01:28	1:08:22	Out—t	r a n s m	ission	trouble			
			Lap.		6:51	6:47	6:57	5:48	6:42	6:49	6:45	6:49	6:54							
4	Maxwell	Tetslaff	Elaps.	7:37	15:07	22:26	29:33	36:44	43:52	51:02	58:18	1:05:49	Out—	broken	axle					
			Lap.		7:30	7:19	7:07	7:11	7:08	7:50	7:16	7:21								
9	Duesenberg	E. Rickenbacher	Elaps	7:11	15:27	Out —b r o ken gear shift lever														
			Lap.		8:16															
14	Sunbeam	H. Grant	Elaps	8:03	15:47	Out —b r o ken oil line														
			Lap.		7:44															

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ing three laps, Rickenbacher docking the Duesenberg with a broken gearshift lever, and Grant, his trousers' legs covered with grease, abandoning the Sunbeam with a broken oil line.

In the next five laps, three more cars were eliminated, Tetziaff's Maxwell retiring with a broken axle after completing nine circuits of the course, Pullen dropping out on the eleventh lap because of transmission trouble, and a faulty magneto brought Gaston Maurice to the pits permanently on the twelfth lap.

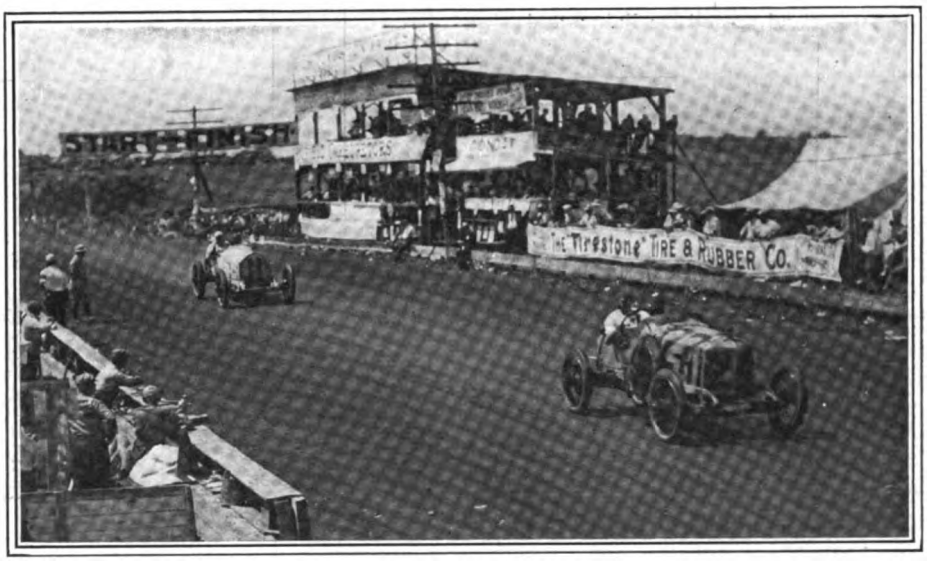
Wishart Leads by 7 Minutes.

The fourteenth lap proved disastrous for both Alley and Carlson. The Duesenberg was abandoned with transmission trouble and a refractory motor resulted in the elimination of the Maxwell.

At the halfway mark Wishart, who had increased his lead on every lap, was 7 minutes ahead of De Palma. For the 150 miles, he averaged 79.6 miles an hour. Wilcox, in the Gray Fox, was 12 minutes behind the leader; Chandler was running fifth, less than a minute behind Wilcox; and the two Stutzes trailed the Braender Bulldog. De Palma made his first stop since the race started, losing but 59 seconds in taking on gasolene and oil in the sixteenth lap. It looked then like Wishart's race. His car was faster than the Mercedes and he had not stopped.

Wishart was forced to stop his next time around, however, and spent 1 minute 23 seconds for fuel and tightening a hub cap.

Otto Henning, driving the No. 26 Mercer, quit the race after covering 22 laps because of engine trouble. Wishart stopped for a second time on the 23rd lap to tighten the gasolene tank which jolted loose. He lost only 1 minute and 10 seconds in making the repairs, and at the completion of 200 miles had a lead of more than 6 minutes on De Palma. At this stage of the race, Anderson was third and Mulford fourth, the Stutz having 4 minutes' advantage over the Peugeot.



Picturesque Barney Oldfield, universal favorite during the first day's racing, as he passed Wilcox in the Gray Fox directly in front of the grandstand

Engine trouble eliminated Roberts's Pahys on the 25th lap. On the same circuit, De Palma blew a tire on the backstretch and stopped twice, once at each side of the course to change casings and once at the pit to take on a spare.

Although leading by a wide margin, it could be seen that Wishart was in trouble. His gasolene tank was leaking badly as he passed the stands and on his 26th lap, he stopped for more than 2 minutes in a futile endeavor to strap on the tank. One more circuit of the course and Wishart was forced to abandon the Mercer.

At the time of Wishart's withdrawal,

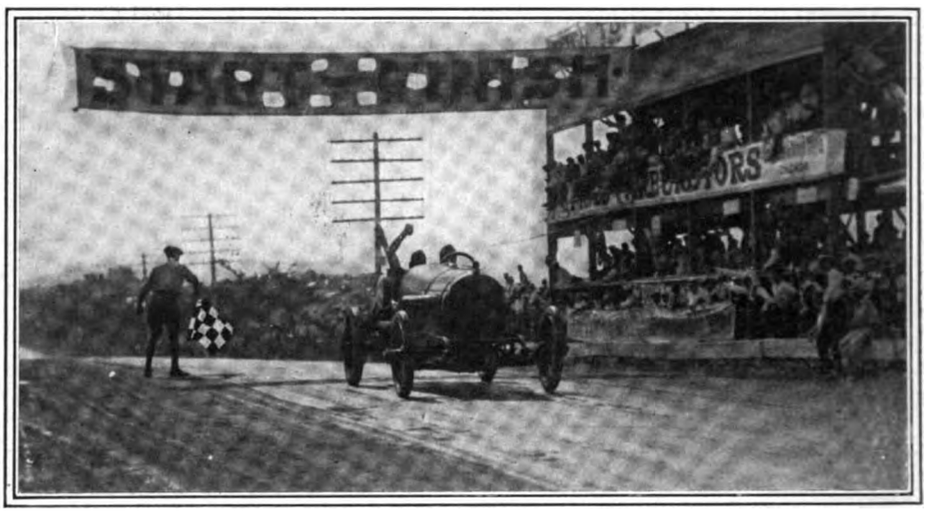
CAGO AUTOMOBILE TROPHY—UNDER 450 INCHES DISPLACEMENT

18 150 Miles 4880 Ft.	19 159 Miles 1610 Ft.	20 167 Miles 3640 Ft.	21 176 Miles 390 Ft.	22 184 Miles 2420 Ft.	23 192 Miles 4450 Ft.	24 201 Miles 1200 Ft.	25 209 Miles 3230 Ft.	26 217 Miles 5260 Ft.	27 226 Miles 2010 Ft.	28 234 Miles 4040 Ft.	29 243 Miles 790 Ft.	30 251 Miles 2820 Ft.	31 259 Miles 4850 Ft.	32 268 Miles 1600 Ft.	33 276 Miles 3630 Ft.	34 285 Miles 380 Ft.	35 293 Miles 2410 Ft.	36 301 Miles 4440 Ft.	Position at Finish	Miles per Hour
2:00:44	2:07:22	2:13:56	2:20:37	2:27:23	2:34:14	2:40:56	2:50:57	2:57:50	3:04:35	3:11:10	3:18:20	3:24:51	3:31:37	3:38:16	3:44:55	3:51:32	3:58:16	4:05:01	1	73.91
6:34	6:38	6:34	6:41	6:46	6:51	6:42	10:01	6:53	6:45	6:35	7:10	6:31	6:46	6:39	6:39	6:37	6:44	6:45		
2:02:36	2:09:26	2:17:31	2:24:08	2:30:45	2:37:20	2:43:55	2:50:32	2:57:11	3:03:50	3:10:34	3:17:16	3:24:28	3:32:21	3:39:08	3:45:47	3:52:28	3:59:08	4:05:45	2	73.69
6:33	6:50	8:05	6:37	6:37	6:35	6:35	6:37	6:39	6:39	6:44	6:42	7:12	7:53	6:47	6:39	6:41	6:40	6:37		
2:06:34	2:13:09	2:20:57	2:27:38	2:34:23	2:41:24	2:48:15	2:54:48	3:01:18	3:08:13	3:16:08	3:22:49	3:29:21	3:35:59	3:42:36	3:49:09	3:55:40	4:02:05	4:08:16	3	72.94
7:32	6:35	7:48	6:41	6:45	7:01	6:51	6:33	6:30	6:55	7:55	6:41	6:32	6:38	6:37	6:33	6:31	6:25	6:11		
2:07:17	2:14:30	2:23:37	2:30:29	2:37:40	2:44:36	2:51:37	2:58:36	3:05:33	3:12:29	3:19:21	3:26:15	3:33:16	3:40:18	3:47:15	3:50:09	4:01:09	4:08:06	4:15:23	4	70.91
7:59	7:13	9:07	6:52	7:11	6:56	7:01	6:59	6:57	6:56	6:52	6:54	7:01	7:02	6:57	6:54	7:00	6:57	7:17		
2:05:58	2:16:56	2:24:05	2:32:51	2:43:19	2:50:20	3:57:17	3:04:18	3:11:12	3:18:19	3:25:15	3:32:19	3:44:38	3:52:04	3:59:06	4:06:18	4:13:25	4:20:54	4:22:58	5	68.86
6:47	10:58	7:09	8:46	11:28	7:01	6:57	7:01	6:54	7:17	6:56	7:04	12:19	7:26	7:02	7:12	7:07	7:29	7:04		
2:17:56	2:25:32	2:33:05	2:40:32	2:47:55	2:55:18	3:02:34	3:09:58	3:17:13	3:24:33	3:31:51	3:39:10	3:51:01	3:58:58	4:05:47	4:12:32	4:19:18	4:26:18	4:33:18	6	66.26
8:13	7:36	7:33	7:27	7:23	7:23	7:16	7:24	7:15	7:20	7:18	7:19	11:51	7:57	6:49	6:45	6:46	7:00	7:00		
2:23:07	2:30:32	2:37:55	2:45:20	2:52:48	3:00:14	3:07:35	3:14:56	3:22:18	3:29:38	3:37:02	3:44:25	3:51:44	3:59:11	4:08:12	4:15:33	4:22:53	4:30:12	4:37:29	7	65.23
7:23	7:26	7:23	7:25	7:28	7:26	7:21	7:21	7:22	7:20	7:24	7:23	7:19	7:27	9:01	7:21	7:20	7:19	7:17		
2:05:49	2:17:59	2:24:48	2:31:44	2:38:42	2:46:52	2:53:49	3:00:42	3:07:54	3:15:21	3:32:17	3:40:15	3:47:21	3:54:34	4:01:43	4:09:14	4:21:50	4:29:19	4:37:43	8	65.18
9:53	12:10	6:59	6:56	6:58	8:10	7:57	6:53	7:12	7:27	6:56	7:58	7:16	7:13	7:09	7:31	12:36	7:29	7:24		
3:04:41	3:13:14	3:21:42	3:30:04	3:38:16	3:46:23	3:56:24	4:04:41	4:12:58	4:21:14	4:40:11	Out—	gearshift	lever mis	sing						
15:14	8:33	8:28	8:22	8:12	8:07	9:01	8:17	8:17	8:16	8:57										
1:53:02	2:01:14	2:07:34	2:13:50	2:20:08	2:26:28	2:34:26	2:40:56	3:07:57	3:14:15	Out—	broken g	asoline t	an'k							
6:13	8:12	6:20	6:16	6:18	6:20	7:38	6:30	7:01	6:18											
2:28:12	2:35:43	2:43:13	2:50:44	2:58:12	3:05:40	3:14:27	Out—	broken g	asoline t	an'k										
7:31	7:31	7:30	7:31	7:38	7:28	8:47														
2:18:01	2:25:57	2:33:27	2:41:07	Out—	broken	water m	anifold													
8:51	7:56	7:30	7:40																	

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Anderson had passed De Palma and with the Mercer no longer a contender, the Stutz led the Mercedes by 39 seconds. Mulford was third; Oldfield, fourth; Chandler, fifth; Heineman, sixth, and Dearborn, seventh.

On the 31st lap De Palma passed Anderson and assumed a lead of 44 seconds. On the next lap he increased this to 52 seconds but did not gain or lose a second on the 33rd circuit. De Palma was a fraction over a minute to spare at the completion of the 34th lap but so desperately did Anderson drive the last 16 miles that De Palma got the checkered flag only 44 seconds before the Stutz pilot finished the most gruelling race in the whole history of the Elgin speed carnival.



Pullen in his Mercer got the checkered flag second in the Elgin race a little more than a minute behind the flying De Palma; judges stand in the background

DE PALMA DUPLICATES PREVIOUS DAY'S VICTORY

A hiatus of 24 hours—a busy hiatus of tearing down and reassembling speed creations—and 28 cars, the largest field that has ever faced a starter in an American road race, answered the call of the clerk of the course for the struggle for the Elgin National trophy, the second day's contest on the Elgin road circuit of 8.38 miles.

Thirty-two cars originally were nominated but four did not put in an appearance—the No. 3 Duesenberg, the No. 7 Marmon, the No. 20 Peugeot and No. 23 Peugeot. Two, the Duesenberg and No. 20 Marmon, spent their strength in the race of the day before. The others lined up as follows:

Dearborn's Stutz; Fontaine's Lozier.
Tetzlaff's Maxwell; Hearne's Burman.
Burman's Peugeot; Pullen's Mercer.
Rickenbacher's Duesenberg; De Palma's Mercedes.

TIME BY LAPS OF THE TWENTY-SIX DRIVERS WHO STRUG

No.	Car	Driver	Lap / Time	1 8 Miles 2030 Ft.	2 16 Miles 4060 Ft.	3 25 Miles 810 Ft.	4 33 Miles 2840 Ft.	5 41 Miles 4870 Ft.	6 50 Miles 1620 Ft.	7 58 Miles 3650 Ft.	8 67 Miles 400 Ft.	9 75 Miles 2430 Ft.	10 83 Miles 4460 Ft.	11 92 Miles 1210 Ft.	12 100 Miles 3240 Ft.	13 108 Miles 5270 Ft.	14 117 Miles 2020 Ft.	15 125 Miles 4050 Ft.	16 134 Miles 800 Ft.	17 142 Miles 2830 Ft.
10	Mercedes.....	R. De Palma...	Elaps.	6:44	14:13	21:12	30:06	37:05	44:00	50:46	57:32	1:04:23	1:11:19	1:18:03	1:24:49	1:31:33	1:38:25	1:45:16	1:52:01	2:00:[illegible]
			Lap...		7:29	6:59	8:54	6:59	6:55	6:46	6:46	6:51	6:55	6:44	6:46	6:44	6:52	6:51	6:45	[illegible]
8	Mercer.....	E. Pullen.....	Elaps.	7:00	15:07	21:03	27:56	34:47	41:43	48:31	55:22	1:02:11	1:09:05	1:16:54	1:22:47	1:29:39	1:36:30	1:43:19	1:50:10	1:57:11
			Lap...		7:07	6:56	6:53	6:51	6:56	6:48	6:51	6:49	6:54	6:49	6:53	6:52	6:51	6:49	6:51	7:01
11	Stuts.....	B. Oldfield.....	Elaps.	7:06	13:57	20:58	27:54	34:47	41:38	48:31	55:19	1:02:08	1:09:02	1:15:57	1:22:45	1:30:02	1:39:57	1:47:10	1:54:17	2:01:21
			Lap...		6:51	7:01	6:56	6:53	6:51	6:53	6:48	6:49	6:54	6:55	6:48	7:17	9:55	7:13	7:07	7:14
29	Sunbeam.....	G. Maurice....	Elaps.	7:46	15:01	22:22	30:09	37:29	44:46	52:08	59:25	1:06:42	1:14:04	1:21:21	1:28:36	1:35:54	1:43:18	1:50:59	1:58:05	2:12:53
			Lap...		7:15	7:21	7:47	7:20	7:17	7:22	7:17	7:17	7:22	7:17	7:15	7:18	7:14	7:41	7:06	14:48
5	Burman Sp....	Ed. Hearne....	Elaps.	7:27	14:55	22:30	30:06	37:31	45:02	52:32	59:58	1:07:25	1:14:55	1:22:28	1:30:00	1:37:40	1:45:15	1:52:55	2:00:32	2:08:18
			Lap...		7:28	7:35	7:36	7:25	7:31	7:30	7:26	7:27	7:30	7:33	7:32	7:40	7:35	7:40	7:37	7:46
6	Peugeot.....	R. Burman....	Elaps.	6:43	13:55	20:28	27:05	33:46	40:24	47:06	53:51	1:00:37	1:07:23	1:14:00	1:20:43	1:27:30	1:34:21	1:41:09	1:47:54	1:54:43
			Lap...		7:12	7:33	6:37	6:41	6:38	6:42	6:45	6:46	6:46	6:37	6:43	6:47	6:51	6:48	6:45	6:49
23	Maxwell.....	W. Carlson....	Elaps.	9:35	25:32	32:31	39:27	46:21	53:09	1:00:08	1:07:04	1:13:57	1:20:47	1:36:49	1:45:38	1:57:47	2:05:14	2:14:42	2:22:20	2:29:29
			Lap...		15:57	6:59	6:56	6:54	6:48	6:59	6:56	6:53	6:50	16:02	8:49	12:09	8:27	9:28	7:38	7:09
12	Duesenberg....	Tom Alley.....	Elaps.	7:05	14:19	21:15	28:14	35:06	41:57	48:41	55:25	1:02:01	1:08:43	1:15:26	1:22:12	1:28:56	1:35:41	1:42:20	1:49:11	1:55:58
			Lap...		7:14	6:56	6:59	6:52	6:51	6:44	6:44	6:36	6:42	6:43	6:46	6:44	6:45	6:39	6:51	6:47
26	Mercer.....	Henning.....	Elaps.	7:45	15:18	22:54	30:24	37:56	45:30	52:59	1:00:25	1:07:54	1:15:21	1:22:46	1:51:32	1:59:12	2:06:48	2:14:35	2:22:10	2:29:28
			Lap...		7:33	7:36	7:30	7:32	7:34	7:29	7:26	7:29	7:27	7:25	28:46	7:40	7:36	7:47	7:35	7:26
14	Sunbeam.....	H. Grant.....	Elaps.	7:42	14:40	21:36	28:30	35:35	42:35	49:39	56:37	1:03:41	1:10:41	1:17:49	1:24:50	1:32:07	1:39:09	1:46:10	1:53:15	2:00:21
			Lap...		6:58	6:46	6:54	7:05	7:00	7:04	6:58	7:04	7:00	7:08	7:01	8:07	7:02	7:01	7:05	7:06
1	Stuts.....	F. H. Dearborn	Elaps.	7:33	14:56	22:22	29:47	40:07	48.16	55:44	1:03:08	1:10:31	1:17:55	1:25:17	1:32:39	1:40:06	1:47:30	1:54:51	2:02:12	2:09:24
			Lap...		7:23	7:16	7:25	10:20	7:09	7:28	7:24	7:23	7:24	7:22	7:22	7:27	7:24	7:21	7:21	7:24
27	Gray Fox.....	H. Wilcox.....	Elaps.	6:55	13:43	20:34	27:21	34:04	40:60	47:34	54:18	1:01:17	1:11:59	1:18:47	1:25:31	1:32:20	1:39:11	1:46:10	1:53:33	2:05:27
			Lap...		6:48	6:51	6:47	6:43	6:46	6:44	6:44	6:59	10:42	6:48	6:44	6:49	6:41	6:59	7:23	11:54
30	Marmon.....	L. Heineman...	Elaps.	7:45	14:56	22:02	29:08	36:13	43:24	50:29	58:05	1:08:21	1:15:39	1:22:42	1:29:44	1:36:47	1:43:45	1:50:41	2:08:10	2:15:28
			Lap...		7:11	7:06	7:06	7:05	7:11	7:05	7:36	9:16	7:18	7:03	7:02	7:03	6:58	6:56	7:29	10:18
22	Stuts.....	G. Anderson...	Elaps.	7:00	13:42	20:26	27:32	37:31	44:19	51:22	1:01:20	1:08:12	1:14:57	1:21:41	1:28:29	1:35:13	1:41:58	1:48:41	1:55:32	2:02:16
			Lap...		6:42	6:44	7:06	9:59	6:48	7:03	9:58	6:52	6:44	6:44	6:48	6:44	6:45	6:49	6:51	6:44
19	Mercer.....	S. Wishart.....	Elaps.	6:31	12:52	19:27	25:54	32:21	38:57	45:31	52:04	58:34	1:05:03	1:11:30	1:17:54	1:24:31	Out—	o v e r	t u r n	ed
			Lap...		6:21	6:35	6:27	6:27	6:36	6:34	6:33	6:30	6:29	6:27	6:24	6:27				
4	Maxwell.....	Tetzlaff.....	Elaps.	7:14	15:07	22:10	29:19	36:54	43:54	51:15	58:26	1:05:41	1:13:15	1:23:46	Out—	engine tr	ouble			
			Lap...		7:53	7:03	7:09	7:35	7:00	7:11	7:11	7:15	7:34	10:31						
2	Lozier.....	L. Fontaine....	Elaps.	7:24	14:50	21:52	29:01	40:04	47:19	54:44	1:04:29	1:11:48	Out—	broken	wheel					
			Lap...		7:26	7:02	7:09	11:03	7:15	7:25	9:45	7:19								
31	Braender-Bulldog	W. Chandler...	Elaps.	7:24	14:36	21:33	32:06	38:56	52:02	1:15:13	Out—	caught	fire							
			Lap...		7:12	6:57	8:33	6:50	13:06	23:11										
28	Chadwick.....	Burt.....	Elaps.	8:10	17:06	25:16	33:45	44:14	1:07:57	1:18:07	Out—	engine tr	ouble							
			Lap...		8:56	8:10	7:29	10:29	23:43	10:10										
9	Duesenberg....	E. Ricken-bacher	Elaps.	7:04	13:56	21:00	28:00	34:56	41:53	Out—	motor tr	ouble								
			Lap...		6:52	7:04	7:00	6:56	6:47											
24	Maxwell.....	Tom Orr.....	Elaps.	9:40	19:54	37:01	44:46	1:02:31	1:10:23	Out—	faulty m	otor								
			Lap...		10:14	17:07	9:45	7:45	7:52											
21	Pahys.....	M. Roberts....	Elaps.	7:49	15:18	25:01	37:07	Out—	faulty m	otor										
			Lap...		7:29	9:43	12:06													
32	Keeton.....	J. C. Callaghan.	Elaps.	8:54	17:20	25:37	34:02	Out—	because	of faulty	brakes									
			Lap...		8:26	8:17	8:25													
18	Marmon.....	W. D'Alene....	Elaps.	7:50	16:10	23:24	Out—	broken	frame an	d radiato	r									
			Lap...		8:20	7:14														
25	White.....	E. Cailloutte...	Elaps.	8:29	19:54	Out—	engine	trouble												
			Lap...		10:25															
15	Great Western.	W. Tidmarsh..	Elaps.	Out—	broken	conne	cting r	od												
			Lap...																	

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DRIVERS AND CARS THAT WON PREVIOUS ELGIN RACES

Event.	Winner.	Car.	Distance. Miles.	Feet.	Average Speed.
1910.					
Elgin National	Ralph Mulford	Lozier	305	204	62.5
Illinois Cup	Al. Livingston	National	203	1,896	60.6
Kane Co. Cup	Dave Buck	Marmon	169	4,260	55.1
Fox River Cup	Ed. Hearne	Benz	135	3,024	54.1
1911.					
Elgin National	Len Zengle	National	305	204	66.45
Illinois Cup	Don Herr	National	203	1,896	65.63
1912.					
Free-For-All	Ralph De Palma	Mercedes	305	...	68.9
Elgin National	Ralph De Palma	Mercedes	254	...	68.4
Illinois Cup	Chas. Merz	Stutz	203	...	65.6
Aurora Cup	Hughie Hughes	Mercer	152	...	65
Jencks Cup	H. Endicott	Mason	101	...	60.5
1913.					
Chicago Club Trophy	Ralph De Palma	Mercer	305	204	66.8
Elgin National	Gil Anderson	Stutz	305	204	71.5

Oldfield's Stutz; Alley's Duesenberg.
Grant's Sunbeam; Tidmarsh's Great Western.
Walker's Rae; Luttrell's White.
D'Alene's Marmon; Wishart's Mercer.
Roberts's Pahys; Anderson's Stutz.
Carlson's Maxwell; Cailouette's White.
Henning's Mercer; Wilcox's Gray Fox.
Hoskins's Chadwick; Maurice's Sunbeam.
Heineman's Marmon; Chandler's Braender Bulldog.
Callaghan's Keeton; Orr's Maxwell.

So large was the field that the last pair had scarcely been sent away when there was the cry of "Car coming" and Fontaine's Lozier came tearing down the homestretch.

On the third circuit of the course, Burman passed Fontaine and moved up into the position of pacemaker, with Fontaine, Pullen, Dearborn and Rickenbacher taking his smoke. On corrected time, Wishart led Anderson by 50 seconds and was driving like a madman to overtake and pass Burman.

On the fourth and fifth laps, Burman threw off Wishart's challenge. The Mercer was hanging onto the Peugeot with the tenacity of a bulldog, however, and it seemed only a question of minutes before it would pass the French car. Anderson, pushing Wishart, was forced to stop at the pits to repair a leaking radiator cap and lost almost 4 minutes.

At the end of 50 miles, Wishart had a lead of 1 minute 5 seconds on Burman and was driving at the rate of 75.1 miles per hour.

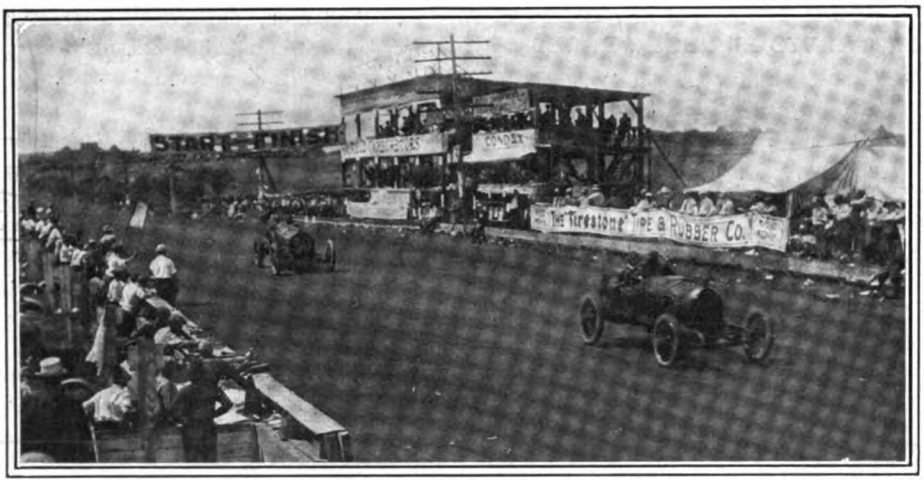
Eight cars had been eliminated at this stage of the struggle; Mercedes Fritz Walker had failed to complete one lap of the race and docked his Rae with a broken clutch; a broken connecting rod retired Tidmarsh's Great Western on the second lap, and a broken radiator caused the withdrawal of Luttrell's White; engine trouble encountered on the third lap caused the retirement of Cailouette's white; D'Alene, in rounding Hornbeek's turn on the fourth lap, crashed into a tree and broke the frame and radiator of his Marmon; Mort Roberts abandoned the Pahys with a faulty motor on the fifth lap, and Orr voiced a similar complaint about his Maxwell on the next circuit of the course. Early in the race, Callaghan was ordered out on account of the Keeton's bad brakes.

Five more cars were docked disabled

GLED FOR THE ELGIN NATIONAL TROPHY—FREE FOR ALL

18 150 Miles 4860 Ft.	19 159 Miles 1610 Ft.	20 167 Miles 3640 Ft.	21 176 Miles 390 Ft.	22 184 Miles 2420 Ft.	23 192 Miles 4450 Ft.	24 201 Miles 1200 Ft.	25 209 Miles 3230 Ft.	26 217 Miles 5260 Ft.	27 226 Miles 2010 Ft.	28 234 Miles 4040 Ft.	29 243 Miles 790 Ft.	30 251 Miles 2820 Ft.	31 259 Miles 4850 Ft.	32 268 Miles 1600 Ft.	33 276 Miles 3630 Ft.	34 285 Miles 380 Ft.	35 293 Miles 2410 Ft.	36 301 Miles 4440 Ft.	Position at Finish	Miles per Hour
2:06:48	2:13:34	2:20:16	2:26:59	2:33:42	2:40:20	2:47:10	2:53:48	3:00:26	3:07:06	3:13:49	3:20:21	3:26:51	3:33:27	3:39:57	3:46:30	3:52:58	3:59:35	4:06:18	1	73.53
6:46	6:46	6:42	6:43	6:43	6:38	6:40	6:38	6:38	6:40	6:43	6:32	6:30	6:36	6:30	6:33	6:28	6:37	6:43		
2:04:04	2:11:00	2:17:59	2:24:54	2:31:52	2:38:45	2:45:42	2:52:35	2:59:28	2:06:19	3:13:05	3:19:50	3:26:36	3:33:22	3:40:10	3:46:55	3:53:45	4:00:31	4:07:28	2	73.17
6:53	6:56	6:59	6:55	6:58	6:53	6:57	7:53	6:53	6:51	6:46	6:45	6:46	6:46	6:48	6:45	6:50	6:46	6:57		
2:09:12	2:18:07	2:25:11	2:32:16	2:39:16	2:46:25	2:53:58	3:02:36	3:09:47	2:17:56	3:24:05	3:31:44	3:40:03	3:47:14	3:54:26	4:01:42	4:09:46	4:16:59	4:24:02	3	68.59
7:41	8:55	7:04	7:05	7:00	7:09	7:33	8:38	7:11	7:07	7:09	7:39	8:19	7:11	7:12	7:16	8:04	7:13	7:03		
2:20:05	2:27:29	2:34:46	2:42:03	2:49:27	2:56:39	3:03:56	3:11:08	3:18:23	3:25:46	3:32:52	3:39:56	3:47:10	3:54:31	4:01:58	4:09:15	4:16:36	4:23:58	4:31:09	4	66.78
7:32	7:24	7:17	7:17	7:24	7:12	7:17	7:12	7:15	7:23	7:06	7:04	7:14	7:21	7:27	7:17	7:21	7:22	7:11		
2:16:11	2:23:52	2:31:30	2:41:28	2:49:03	2:56:40	3:04:14	3:11:49	3:19:27	3:26:59	3:34:28	3:42:52	3:51:18	3:58:44	4:06:17	4:13:43	4:21:08	4:28:31	4:35:47	5	65.79
7:53	7:41	7:38	9:58	7:35	7:37	7:34	7:35	7:38	7:32	7:29	8:24	8:26	7:26	7:33	7:26	7:25	7:23	7:16		
2:01:34	2:08:27	2:15:22	2:22:31	2:29:31	2:36:32	2:43:34	2:50:32	2:57:24	3:04:29	3:11:25	3:18:25	3:25:17	3:32:23	3:41:48	3:49:32	3:57:07	Out—	engine tr	ouble	
6:52	6:53	6:55	7:09	7:00	7:01	7:02	6:58	6:52	7:05	6:56	7:00	6:52	7:06	9:25	7:44	7:35				
2:37:20	2:44:42	2:52:05	2:59:42	3:08:59	3:18:02	3:25:22	3:33:14	3:44:34	3:51:01	3:58:34	4:06:06	4:13:36	4:21:03	4:28:35	4:36:23	Running	when fla	gged		
7:31	7:22	7:23	7:37	9:17	9:03	7:20	7:52	11:20	6:27	7:33	7:32	7:30	7:27	7:32	7:48					
2:02:39	2:09:20	2:15:56	2:23:34	2:30:30	2:37:18	2:44:00	2:50:38	2:57:16	3:03:51	3:10:40	3:17:24	3:24:04	3:30:44	3:37:31	Out—	broken d	riveshaft			
6:41	6:41	6:38	7:36	6:56	6:48	6:42	6:38	6:38	6:35	6:49	6:44	6:40	6:40	6:47						
2:37:05	2:44:53	2:52:17	2:59:55	3:07:32	3:15:12	3:22:47	3:30:20	3:37:51	3:45:31	3:53:08	4:00:45	4:08:21	4:15:59	4:25:27	Running	when fla	gged			
7:29	7:48	7:24	7:38	7:37	7:40	7:35	7:35	7:31	7:40	7:37	7:37	7:36	7:38	9:28						
2:07:30	2:14:47	2:21:56	2:39:40	2:46:57	Out—	engine tr	ouble													
7:09	7:17	7:09	7:44	7:17																
2:17:13	2:25:57	2:33:34	2:41:14	2:49:54	Out—	engine tr	ouble													
7:37	8:34	7:37	8:40	8:14																
2:12:57	2:20:03	2:27:19	2:39:40	Out—	engine tr	ouble														
7:30	7:06	7:16	12:21																	
2:25:30	2:32:39	2:45:37	Out—	disabled	brakes															
7:02	7:09	12:58																		
2:08:58	2:15:42	Out—	radiator	trouble																
6:42	6:44																			

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Ill-fated Spencer Wishart, who was eliminated the first day with a leaky tank when leading, and who was killed the second day

SPECIFICATIONS OF THE CARS

Driver and Car.	Bore and Stroke.	Displ.
Dearborn, Stutz	4.75 x 5.50	389.9
Fountain, Lozier	5.5 x 6.0	570.2
Tetzlaff, Maxwell	4.212 x 8	444.0
Hearne, Burman	5.1 x 5.5	449.0
Burman, Peugeot	3.937 x 7.125	347.0
Pullen, Mercer	3.75 x 6.75	298.2
Rickenbacher, Duesenberg	4.375 x 6	360.8
De Palma, Mercedes	3.7 x 6.3	271.5
Oldfield, Stutz	4.812 x 6	436.6
Alley, Duesenberg	4.375 x 6	360.8
Grant, Sunbeam*	3.15 x 6.25	292.5
Tidmarsh, Great Western	4.21 x 8	444.0
	(Piston valve motor)	
Shrunk, White*	4.062 x 5.75	298.1
D'Alene, Marmon	4.75 x 7	496.2
Wishart, Mercer	4.8 x 6.187	450.1
Mulford, Peugeot	3.937 x 7.09	345.0
Roberts, Tahis	5.04 x 5.5	431.9
Anderson, Stutz	4.812 x 5.75	418.4
Carlson, Maxwell	4.209 x 8	443.3
Orr, Maxwell	4.209 x 8	443.3
Cailouette, White*	4.25 x 5.75	479.5
Henning, Mercer	4.375 x 5.00	300.7
Wilcox, Gray Fox	5.008 x 5.5	431.9
Hoskins, Chadwick*	5 x 6	707.0
Maurice, Sunbeam*	3.15 x 6.25	292.5
Heineman, Marmon	4.5 x 7	445.4
Chandler, Braender B'd'g	4.312 x 6	350.5
Callaghan, Keeton	5.1 x 5.5	432.0

* Six cylinders.

before the 100-mile mark was reached. Rickenbacher's Duesenberg suffered from engine trouble, and the Braender Bulldog caught on fire on the eighth lap; the Lozier broke a wheel on the tenth lap; and engine trouble eliminated Tetzlaff on the eleventh lap.

The accident that cost Spencer Wishart his life on the fourteenth lap gave Burman an opportunity to take the lead once more and at the completion of the eighteenth lap, or with the race half over, the speed king led by 1 minute 1 second, with Alley in the Duesenberg chasing him. Pullen in the Mercer was third and De Palma in the Mercedes fourth, 5 minutes behind the new leader. A stop for gasolene and oil on the seventh lap, De Palma's only stop in the 301 miles, cost him 55 seconds.

Anderson, a dangerous competitor early in the race, went out on the 20th lap, due to radiator trouble. Heineman's Marmon was rolled to the grass with disabled brakes on the 21st lap, and the Gray Fox, Grant's Sunbeam and Dearborn's Stutz were withdrawn on the 23rd lap, all three with balky motors.

Alley stopped for fuel on his 20th lap and was relieved by Rickenbacher, who stepped on the throttle and sent the Duesenberg in pursuit of Burman. He gradually gained on the blue Peugeot until at the end of the 24th lap he had cut down Burman's lead to 26 seconds.

Five times Rickenbacher passed the grandstand, gaining a few seconds on each lap. The distance between the Peugeot gradually and slowly was cut down until at the end of the 30th lap, Rickenbached had passed Burman and led the closely bunched field by 1 minute 13 seconds. Pullen was third, 15 seconds ahead of De Palma and only 2 minutes 32 seconds behind the pacemaker.

Rickenbacher showed the way to the field for two more laps. With only 33 miles more to go, a driveshaft on the Duesenberg broke and Rickenbacher and his mechanician walked to the pits.

With Rickenbacher a spectator instead of a contender, Burman forged to the front once more but held the lead only for a single circuit of the course. The Peugeot motor was the next to surrender under the strain of record-breaking driving and the French car was docked at the completion of the 34th lap of the race.

The withdrawal of the Peugeot left De Palma and Pullen alone on the course to fight for the nerve-racking victory. At the start of the 35th lap, De Palma had a lead of only 47 seconds on Pullen, who had not stopped once since he was sent away at 11 o'clock. The Italian had the faster car, however, and increased his lead to 55 seconds on the next to the last circuit. Pullen, after getting the green flag, urged the yellow Mercer to the limit of its speed but the chase was a hopeless one and De Palma thundered over the line a victor by 1 minute 10 seconds.

De Palma had monopolized the victory market at Elgin and had twice shattered seconds.

EQUIPMENT CARRIED BY THE CARS IN BOTH RACES

Car	Driver	Magneto	Plugs	Carbureter	Oil	Tires	Wheels
Stutz	Dearborn	Bosch	Bosch	Rayfield	Monogram	Firestone	Wood
Stutz	Oldfield	Bosch	Bosch	Schebler	Monogram	Firestone	Houk
Stutz	Anderson	Bosch	Bosch	Schebler	Monogram	Silvertown	Houk
Duesenberg	Rickenbacher	Bosch	Bosch	Schebler	Oilzum	Riverside	R. W.
Duesenberg	Alley	Bosch	Bosch	Schebler	Oilzum	Riverside	Wood
White	Shrunk	Bosch	Bosch	White	Polarine	Braender-Michelin	Wood
Mercedes	DePalma	Bosch	Bosch	Mercedes	Monogram	Nassau	R. W.
Maxwell	Tetzlaff	Bosch	Bosch	Harroun	Polarine	Silvertown	Houk
Maxwell	Carlson	Bosch	Rajah	Harroun	Polarine	Silvertown	Houk
Marmon	Heinemann	Bosch	Bosch	Schebler	Monogram	Palmer Cord	Wood
Gray Fox	Wilcox	Bosch	Bosch	Rayfield	Castor	Silvertown	R. W.
Sunbeam	Grant	Bosch	K.L.G	Master	Castor	Palmer Cord	Steel
Sunbeam	Maurice	Bosch	K.L.G	Master	Castor	Palmer Cord	Steel
Great Western	Tidmarsh	Bosch	Bosch	Schebler	Oilzum	Braender	Houk
Braender Bull Dog	Chandler	Bosch	Bosch	Rayfield	Oilzum	Braender	Dunlop
Mercer	Henning	Bosch	Bosch	Rayfield	Castor	Silvertown	R. W.
Mercer	Wishart	Bosch	Bosch	Rayfield	Castor	Palmer-Silvertown	R. W.
Pahys.	Roberts	Bosch	Bosch	Rayfield	Oilzum	Michelin	Wood
Peugeot	Burman	Bosch	Bosch	Master	Castor	Nassau	R. W.
Burman	Hearne	Bosch		Master		Nassau	R. W.
Mercer	Pullen	Bosch	Bosch	Rayfield	Castor	Palmer	R. W.
Marmon	D'Alene	Bosch	Bosch	Rayfield	Monogram	Silvertown-Riverside	
Peugeot	Mulford	Bosch	Rajah	Rayfield		Braender	
Chadwick	Hoskins	Bosch	Rajah	Rayfield		Firestone	Houk
Keeton	Callaghan		Bosch	Rayfield	Polarine	Nassau	

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Reilly Proposes an Anti-Pest Convention

But Tommy Trumbull Finds a Better Way to Avoid the Town Nuisance—He Simply Walked Away.

By Ray W. Sherman

If Amos Buskin had been born with a spoonful of intelligence he might have been an orator. He might have been a politician, or he might even have been a salesman. But his skull housed a whirling, rattling mess of inconsequential thinks and thunks which treaded upon each other's heels and kept his tongue working overtime in a vain effort to keep up with his thinking apparatus.

Not that he ever thought of anything worth while—he didn't. But he talked, nevertheless. He was not a good conversationalist, for a good conversationalist is a good listener. Amos never listened—he talked.

Europe's War God-send to Amos.

The European war was a god-send to Amos. Politics in Callawassa was not a very lively topic just now, and the Mexican war was petering out; Amos was having trouble in getting a listener to the old and frayed topics when the European war happened along and he drew a deep breath and started all over.

For occupation he was supposed to run a little store out in the suburbs and he always looked neat and half-way pros-



Amos started to introduce himself, but Reilly cut him off

perous; but the time he spent in the store was little. His wife ran the store and managed to make a comfortable living, while Amos flitted hither and thither and perennially wished himself on the good people of the town, who never happened to be in if they saw Amos first.

Reilly's acquaintance with Amos had been unfortunate. Amos got some strange idea into his head once upon a time and wrote to the Sennett factory for a catalog. Of course the inquiry was sent on to Reilly, and the dealer immediately paid Amos a visit. Pursuant to his policy of never cutting a catalog seeker cold no matter how saleless he might appear, Reilly had invited Amos to drop in some day and look the cars over.

Amos dropped in the next day—and several next days.

It was hard to transform the original welcome into an invitation to get out and stay out, so Amos had become a thing to be avoided and kept out whenever possible. But this did not entitle Reilly's establishment to any particular distinction, for Amos was a nuisance wherever he went—and he went everywhere.

He was the town pest.

Explained Whole Darned Business.

"Yes, Mr. Reilly, I don't see how Germany can ever hope to conquer all Europe," he rambled on. He had been there at least a half-hour already. "The proposition is entirely too momentous for one nation at this age of the world. Even though she be backed up by Austria it does not avail her much to my way of thinking.

"Austria has troubles of her own in the Balkan country and to save her prestige and prevent the dual monarchy crumbling and being rent asunder must make a showing against little Servia. Italy has backed out of the triple alliance on what seem to be just grounds and may even throw her influence, if not her fighting strength, into the balance with the triple entente.

"Russia is slow to mobilize, of course; but once the enormous Russian army begins to advance on the eastern border of Germany I do not see how the Kaiser is going to handle the situation. Where he is now enabled to throw his forces to the west against France, he then will have to combat even more desperately against the Russians and Slavs on the east. I think the chances of success are entirely with the triple entente, which just now is holding together more firmly than the supposedly more strongly-bound triple alliance."

Amos had served in the National Guard once and considered himself a military



Also, Tommy shut the door and Amos couldn't hear what Tommy was dictating

strategist. What he didn't know about war and how to war wasn't in the books, for that was where he had gained his military experience.

"And now for the situation in regard to Alsace-Lorraine," he continued. "These two provinces for which the French have mourned since 1870 are ——"

"Thank God!" said Reilly under his breath, and aloud he added, "Hello, Jim," as the Sales Manager appeared in the door of the office.

Even Started on Sales Manager.

Amos started to introduce himself. "Ah, an acquaintance——" But Reilly cut him off. "Say, Jim," he said, "I want you to go out on a little piece of business with me. I've been waiting several days for you to show up."

Reilly summoned Tommy Trumbull from the shop and left him in charge of the office while Reilly and the Sales Manager climbed into the demonstrator and drove away.

"Where to, Reilly?" asked the Sales Manager.

"Nowhere!" exclaimed Reilly, as he stepped on the accelerator to vent his feelings. "I've just got to get away from that pest." They drove around through

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the shady part of the town and enjoyed the morning.

Meanwhile, back in the salesroom, Tommy cussed Amos Buskin most heartily, but not aloud. It wasn't so much of an excuse to get away from him as it might have appeared, but when Amos undertook to lead Tommy through several centuries of European history the latter found that he had several important letters to dictate. He picked up a stack of letters two inches deep and disappeared into Nellie's office, where



Into the shop he went—And out he went

Amos could plainly see through the glass partitions that the young man was very, very busy.

Also, Tommy shut the door and Amos couldn't hear what Tommy was dictating. Amos began to get uneasy and wonder what to do or where to go next, when Charley came in from the street. He was just going to hang up his hat when he spied Amos, whereupon Charley kept his hat on, made a bluff at hunting through his desk for something, and went out.

Walked Into Shop—and Out.

Amos got up and walked around the salesroom. He was attracted by the shop door and opened it. That was fine! Great! Here were a whole lot of men! Surely some of them would want to talk about the war—or, rather, listen to Amos talk about it.

Into the shop he went. And out he went. Williams, the foreman, knew him well and gently informed Amos that no visitors were allowed. There was no place to go but out, so the stranded talker moved to the street and disappeared. From afar Reilly and the Sales Manager saw him go.

Reilly smiled when he entered the office and saw Tommy in Nellie's office with the door shut dictating letters.

"Funny I never thought of that scheme," said Reilly. "I have got into the habit of dictating at my desk. I'll try that the next time. Do you have any pests like that in your town, Jim?" he asked.

"I suppose so," replied the Sales Manager, "but they don't get to me. They can't get by the door. The telephone girl flags them. There are one or two of that type, but when she sees them coming she knows I'm out."

"I'd give good money to be able to get rid of that man; it would be worth it," asserted Reilly. "He is actually costing me money. He comes in here and spoils a whole morning or an afternoon. If there are prospects in looking at cars he butts around and gets in the way and stands around listening to what is said, all of which is embarrassing to a customer and doesn't help a sale."

Hated to Tell Him to Stay Out.

"Why don't you tell him to stay out?"

"I hate to insult the man, but I guess that's the only way," frowned Reilly. "I've tried every way I could to hint to him that I don't want him here, but it doesn't seem to have any effect on him. I wouldn't mind if he would come in now and then and get out after he had made a call of reasonable length, but he stays and stays and stays!

"I feel sorry for him sometimes. He is that type of man who has to have someone to talk to, and he is so gentle and good-natured. He is an everlasting booster for me and the Sennett car, although I don't know whether a booster like him is any good or not.

"But he is a problem. I think it would be a fine thing for somebody to call a National Anti-pest Convention and have an interchange of views on the best ways of getting rid of pests. I would travel to South America and back to attend such a meeting. Whatever it cost it would be worth it.

"There must be a way of getting rid of them. It can't be that every one stands for them. Hereafter I'm going to ask every one I meet how they handle the pest problem. I suppose out West it is permissible to shoot one if he gets to be too much of a nuisance."

"Hang up a sign," suggested the Sales Manager.

For answer, Reilly dug down into a drawer of his desk. "I don't believe in hanging signs around an office," he said. "but I did get this one," He held it up.

A CORDIAL RECEPTION IS NOT AN INVITATION TO STAY ALL DAY.

"One day when I saw Amos coming I hung this up. I hung it a little crooked on purpose. When I thought he had stayed long enough I straightened the sign up a little so he would see it—but he kept right on staying. Finally I straightened it again.

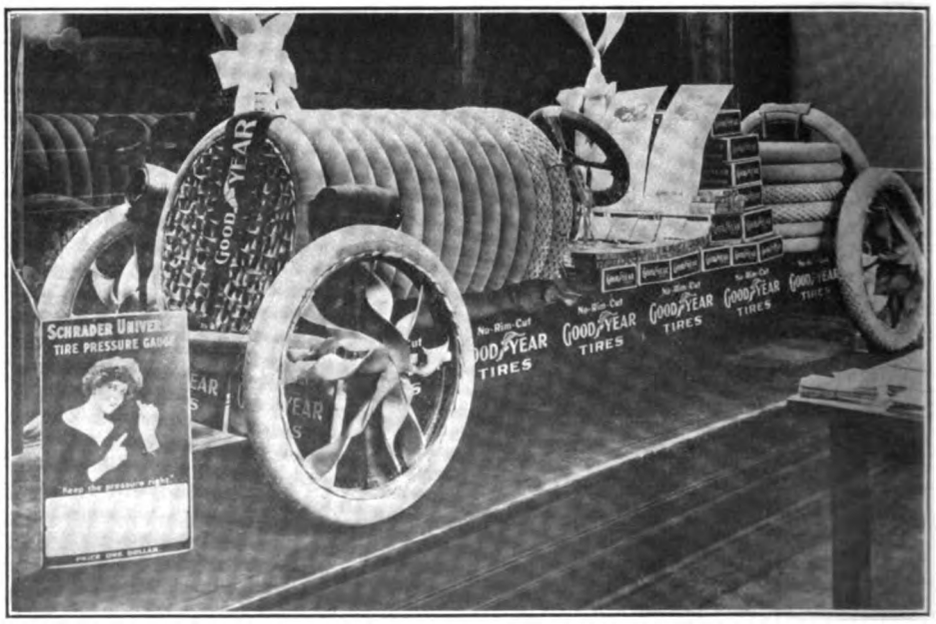
"Amos said, 'I see you're having a lot of trouble with that sign. Try one of these; I use 'em in the store,' and he pulled out a little glass-headed tack and stuck it in the sign."

"Did the sign stick?" laughed the Sales Manager.

"It did," mournfully replied Reilly.

"And so did Amos," added Tommy.

More Than One Way to Make a Car



This display was built in the window of the Goodyear Tire & Rubber Co., Charlotte, N. C. Tires, tube cartons, tissue paper and other parts of the stock were all that was required

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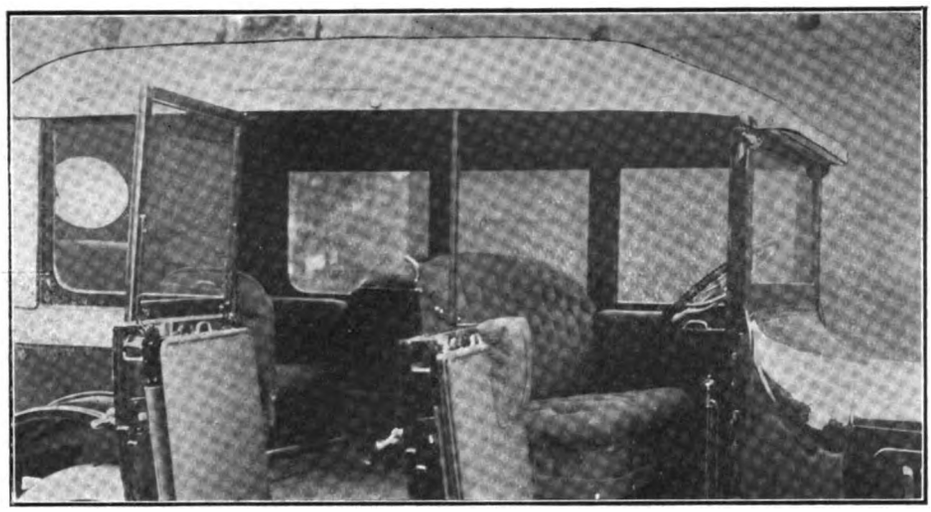
New Springfield Bodies Have Wide Doors

Windows, Too, Are Larger in Latest Sedan, Limousine and Runabout.

Advantages of Open and Closed Bodies Combined—Manipulation Simple.

The Springfield Metal Body Co., Springfield, Mass., has added three new body styles to its line and all of them are marked by exceptionally wide window spaces. In the limousine and sedan types, for instance, the window space has been divided into three panels, thus giving a clearer lookout; as the doors also are wider entrance and exit are rendered much easier. In addition, a convertible runabout type, also with wide doors, has been added.

The prices of the bodies mounted are: Runabout, $900; sedan, $900; five-passenger limousine, $1,300; seven-passenger limousine, $1,400.



In the new limousine there are three windows instead of four and they are correspondingly wider; doors are also very wide

Will Fit Standard Chassis.

These bodies may be mounted on any standard chassis.

The new limousine is built with five- and seven-passenger bodies and differs from former models in that the doors have been widened considerably, the front one now being 22 inches and the rear 27; in this way the window between the two doors in the older models has been eliminated. This change not only gives the passengers more room but it simplifies raising or lowering the sides.

The door windows are on hinges and fit on the inside panel of the doors. They are covered by a pad of the same material as the upholstery, and in raising the sides it is merely necessary to swing these pads out of the way and pull up the windows. Only the rear windows are carried in a pocket on the back of the driver's seat, while in the old type the windows between the doors are also carried here. Thus it is seen that it is less trouble to put up the sides on this new body than on its successor.

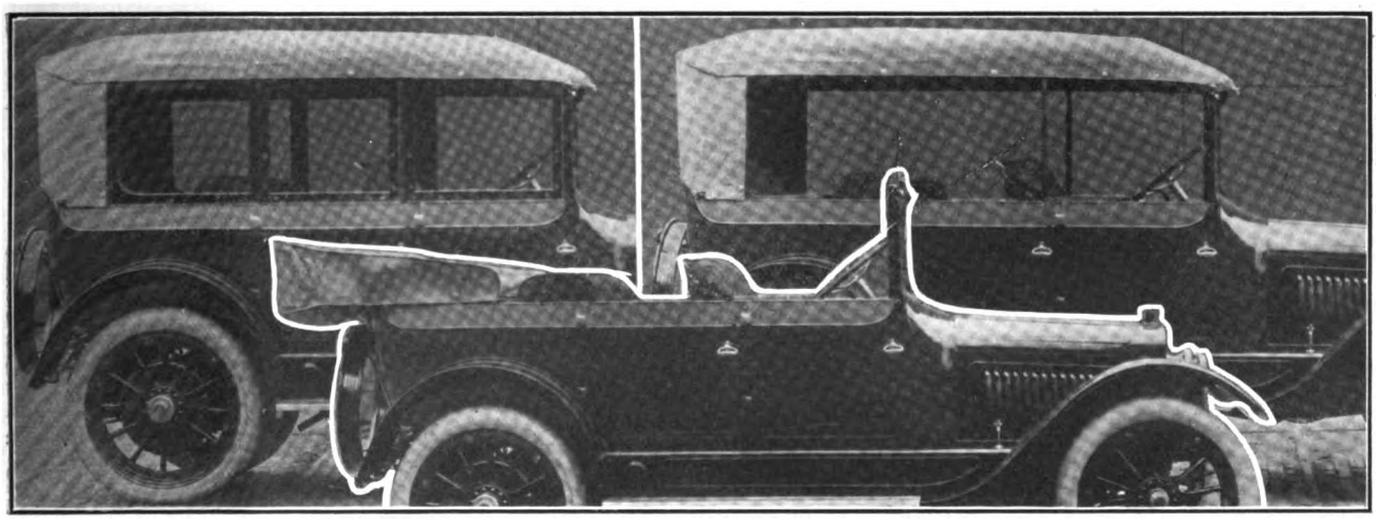
Aisle in Sedan Model.

The sedan type is similar to the limousine except that it has a single door 25 inches wide. There is an aisle between the front seats, which are of the chair type. This model is designed with seating capacity for four or five people. The runabout is made with either a two- or three-passenger body.

The painting and the upholstery, as well as details concerning the interior fittings, are left to the individual taste of the purchaser. The upholstery material may be hand-buffed leather, broadcloth or motocloth.

Five Minutes to Make Change.

The advantages of the convertible type of body are almost too well known to require enumeration. It does the work of two bodies, one of the enclosed and another of the open type, and further has the advantage of being able to change from one to the other in less than five minutes. In changeable weather this is of special advantage because one day it may be pleasant enough for the touring type of body while the following day it may be cold and inclement.



Left—The Sedan when fully enclosed. Right—View of the Sedan model with only the top in position. Center—When the limousine type has its top and sides down there is nothing to indicate it is not an ordinary open touring car

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WIDE-AWAKE MERCHANDISING

GARNER IDEAS FROM READING

Mental Association With Other Men Keeps You Out of a Rut—Be a Winner.

In the store of a certain dealer one Saturday afternoon sat two salesmen. Each was at his own desk and each was reading out of a book. The proprietor came along with a visitor. The men looked up and smiled but both continued their reading.

"What they got, a new sales manual?" inquired the visitor.

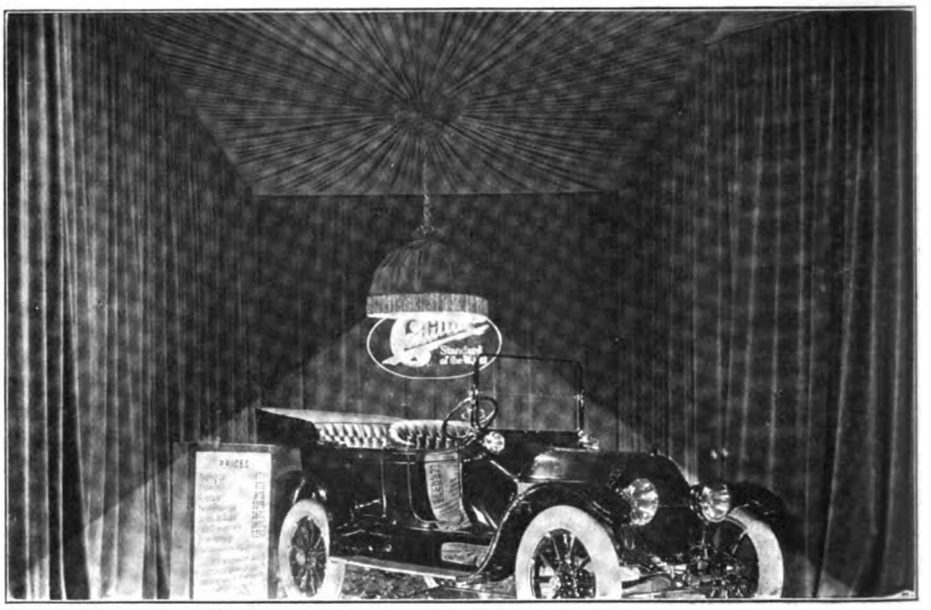
"No," said the boss; "it's a little book on the 'knack of selling,' given as a premium with a certain business magazine. My partner and I got hold of a copy and we told the boys about it and they are all keen for it. You see, if they read things it keeps them out of a rut. It sharpens their wits. It makes them think. It makes them better salesmen and keener men.

"Frankly, it's a pleasure to recommend a book or a magazine to these boys, because they get so much out of it. The man at the first desk is said to be one of the best car salesmen in the city and from our experience we believe his reputation is deserved. He is a reader. He is everlastingly on the lookout for better ideas and newer methods, and between reading and observation he has trained himself for big things. He rarely misses a sile.

"Our other men are built like him and they are winners."

"Dealers who do not regularly subscribe for one or more trade papers are gradually falling behind the times."

—Thomas B. Jeffery Co.'s letter to its salesmen.



This Is the Way One Boston Dealer Showed His Car

Here is an interesting window display by the Cadillac Automobile Co. of Boston. It is equally attractive by night or by day. It stands out in a manner that invites favorable attention. And let it be noted that everything serves to emphasize and feature the car.

There is not a single disturbing element. The window is given a deep shadow-box effect; the car occupies the center of the stage; back of it is the name and the slogan; and nearby is the list of prices and equipment. As a selling proposition it is artistic, practical, concise.

The photograph was taken at night. Can't you imagine the telling effect of the dark cloth background and the single shaded lamp diffusing its powerful rays over the handsome car? As a means of interesting all who passed it proved a winner.

BELIEVE BUSINESS IS GOOD AND GO AFTER IT

When Other Fellow Says, "Business Is Bad," That's the Time to Get Busy.

When some fellow says, "Business is bad," flee from him as from a pestilence.

Don't let the "Bad Business" germ inoculate you. We are all prone to find excuses for the things we fail to do.

Don't let the excuse that "business is bad" mislead you. It's bad enough to fool some one else, but for goodness sake, don't fool yourself.

If business is bad, the chances are that the other fellow is "laying down." Chances are he is using this as an excuse for not going after business.

If the other fellow isn't going after business, **you go after it.**

You can get it more easily when he is inactive.

Crops are good.

Stocks of goods are low.

Business must get better soon.

So get busy.

There are many more cars in the country now than last year.

You can sell tires if you try.

Have the tires to sell and go out and sell them.—Goodyear No-Rim-Cut News.

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TIRE REPAIRER HAS FIXED FIGURE FOR EVERY REPAIR

Assures Mutual Satisfaction — And Profit-Sharing Coupon Helps Boost Business.

The Voss Tire & Repair Co., 305 Jefferson avenue, Detroit, has built up a large tire and repair business by telling the truth and treating customers squarely. That seems like the platform of any successful business, but cases are not unknown where the dealer and his employes have developed a knack of always thinking of their own interests first.

If a man comes in with a repair job and asks Voss what it will cost him to have the work done he is referred to a printed list, and the chances are ten to one that the repair he desires will be listed and prices so that he will know exactly what it costs. This tire repair list of the Voss company is unique in two ways; first, because of its completeness, and secondly, because the prices are extremely moderate.

Makes Price if There is None.

If the particular repair desired by the customer is not on the list he will be given a price on it before he leaves the shop. Voss believes that directness and fairness win more customers and in the long run build a more substantial trade than any other method. And in a business history extending over many years Voss has yet to have his first quarrel with a customer.

"If a man brings in a tire that he wants repaired we look it over carefully before we accept the job. And if we don't think a good, satisfactory repair job can be made we will tell him so. By this plan we turn down at least half the work that is offered us. Frequently the tire is taken elsewhere and repaired, and if it does not stand up and give all of the service the customer expects he is almost certain to remember we advised against it—and we have made a customer.

"The tire repair business is not a gold mine," maintains Voss, "but it will pay a substantial profit if you keep your shop running all the time. Where one accepts rush work and crowds his shop with workers who are not thoroughly organized he is sure to get into trouble.

"We tell our customers that we practically carry insurance on every job we do—and if it does not stand up to bring it back; we'll fix it without charge. We figure if we make a repair costing, say, $3.50, that the customer must get at least $3.50 worth of service from that repair or he will not be satisfied."

Besides the printed price list the Voss company has a profit-sharing coupon system that is a steady business producer and is original with the Voss company.

Goes Light on Coupon in Summer.

During the summer, when trade is naturally heavy, the coupon system is not pushed hard, but at other times of the year it works like a Trojan. A big sign is then featured in the store, reading, "Ask about our profit-sharing coupon system." And they ask.

This coupon or card is given to every purchaser of a repair, patch, or any of the tire accessories. It entitles the holder to a 10 per cent discount when his purchases shall have reached the sum of $25. He can have the discount rebated in cash at the end of that time or he can take it in repairs—as he chooses. Note that the card or coupon is given absolutely free to the customer.

Worked in connection with the printed price list for repairs, it is obvious that it is above board and not intended to do anything but what it says—build trade and have the customer share the profits. There is no chance for the Voss company, for example, to claim it is giving a 10 per cent rebate and then overcharge the customer sufficient to make it up.



When a customer's business totals $25 he is entitled to a 10 per cent rebate

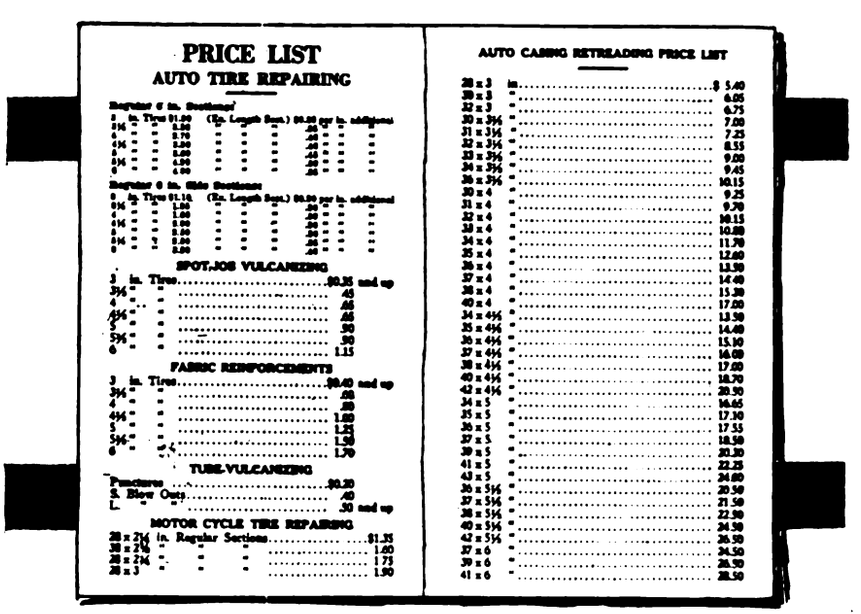
All tires are sold at list prices. But the holder of a coupon gets a 10 per cent rebate when the $25 figure is reached. Now note this: If a holder of a coupon sells his car and has $15 punched on his ticket, the ticket can be transferred to the car purchaser and thus Voss gets his trade also.

Double Check on Customer.

All coupons are punched when purchases or repairs are paid for and a separate account is kept with each ticket number. Duplicate receipts from an Egry register are given the customer every time he pays. And when he claims his rebate he must present these receipts.

Thus, for example, the holder of ticket No. 138 gets a receipt every time. The duplicates are entered up in a book and credited to No. 138. He may have reached only $20 and he might punch the remaining holes and think he could get away with it. But it would not work because Voss has the amounts all credited and the customer must produce his duplicate receipts.

It is a well-thought-out merchandising idea and it works.


PRICE LIST

AUTO TIRE REPAIRING

SPOT JOB VULCANIZING

FABRIC REINFORCEMENTS

TUBE VULCANIZING

MOTOR CYCLE TIRE REPAIRING

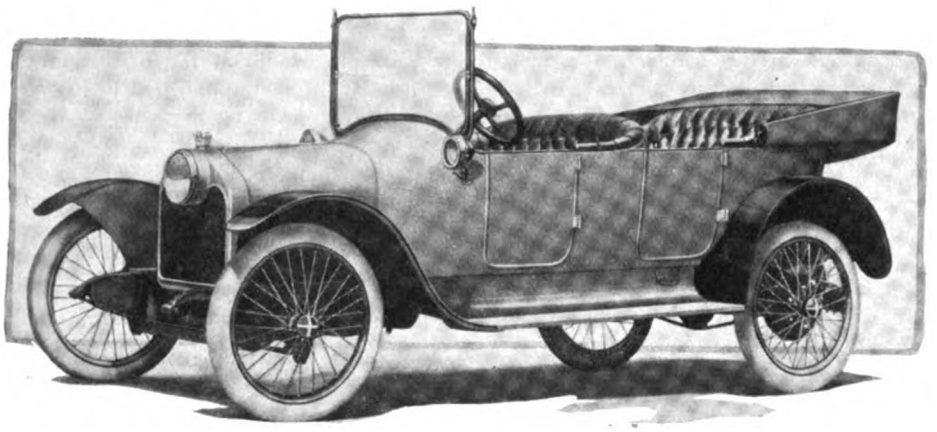
AUTO CASING RETREADING PRICE LIST

Practically every repair that is likely to be called for is listed with a price in this folder—This avoids disputes and helps repairer get same price always

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Three Bodies in Briscoe Line

Clover Leaf Runabout Seats Three and Torpedo Coupe, With Large Windows and Low Appearance, Conforms With the Latest Foreign Practice.



Briscoe 5-passenger touring car sells for $750 with partial equipment and for $900 with full equipment, including Aplco electric lighting and starting, top and side curtains, windshield and speedometer

SELLING FEATURES OF THE NEWEST BRISCOE MODELS.

Price:	
Touring	$750 and $900
Roadster	750 and 900
Coupe	Probably 1,250
Color	Gray and Black
Make of motor	Briscoe
Number of cylinders	Four
Shape	L-head
How cast	Block
Bore	3⅛
Stroke	5⅛
S. A. E. rating	15.6
Magneto	Splitdorf
Carburetter	Holley
Starting-lighting	Aplco
Clutch	Cone
Wheelbase	107
Tires	30 x 3½
Wheels	Wire
Steering	Left
Control	Center
Type rear axle	Floating

Options: 3¾:1 or 4:1 gear ratio.

Equipment: At $750—Electric horn, lamps, storage battery, tools, jack, etc. At $900—In addition to above, electric generator, electric engine starter, top and boot, windshield, speedometer.

Though essentially the same as the experimental models which came over from Europe, the new Briscoe cars, produced by the Briscoe Motor Co. Jackson, Mich., show some minor differences to meet manufacturing conditions and production demands without in any way detracting from mechanical excellence or appearance.

Outwardly, the single headlight in the center of the top of the radiator shell is perhaps the most distinctive feature, while the streamline body and unbroken curves are in accord with the very latest in the body-making art. French gray with black upholstering have been decided upon for the standard colors, and this combination is very pleasing.

Besides the five-passenger touring car models which were the only types seen at the National shows, the line has been extended to take in a roadster and a coupe, both mounted on the standard chassis. The former is styled the Clover Leaf Runabout because the seats are so arranged as to give the appearance of a clover leaf. That is, three may be accommodated, the two outside seats being in line while the middle seat is somewhat back of the other two.

Body lines of both the roadster and the coupe are very pleasing. The rear is nearly of torpedo shape and somewhat similar to the back end of several well known racing cars, notably the Peugeot. The coupe top is very rakish and low in appearance, though of standard height. Windows are large and afford the driver views of the road from all angles.

As at first planned, the price of the Briscoe with electric horn, lamps, storage battery, tools, jack and so on, is $750, and, when equipped with electric starter and generator, top and boot, windshield, and speedometer in addition, the figure is $900. The new coupe probably will list at $1,250.

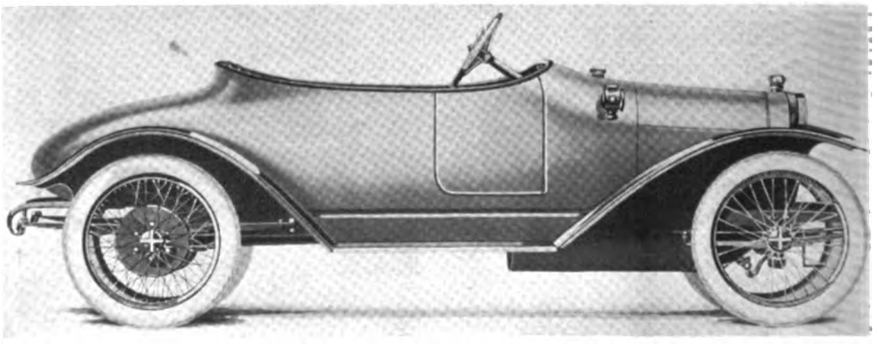
The Briscoe is truly a light car, for its weight is 1,700 pounds, despite the fact that the wheelbase is amply long—107 inches. Tread is standard at 56 inches and wheels are of wire, on which are mounted 30 by 3½ inch tires all around.

In accordance with present-day practice, the gasolene tank, of 9 gallons capacity, is mounted in the cowl dash, affording direct gravity feed to the carburetter.

The motor is of the high speed type with the cylinders cast in block and of L-head form. Bore and stroke are 3⅛ by 5⅛ inches, respectively, according the engine an S. A. E. horsepower rating of 15.6 and a stroke-bore ratio of 1.64. Due to this ratio, the horsepower developed is greatly in excess of that given the motor by the formula.

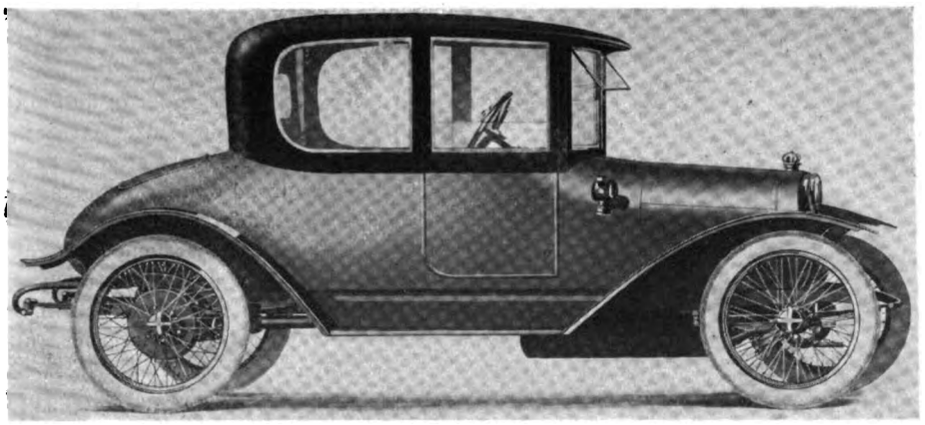
The valves are all located on the right side and covered by readily removable plates. One feature of this motor which is of note is the covering of the valve pockets by a valve plate which is securely bolted to the main cylinder casting. This single plate makes it easy to expose valves and explosion chambers and facilitates the removal of carbon, not only from these parts but from the piston heads as well.

The drive for the camshaft, as well as for the magneto, is of uncommon form



The 3-passenger roadster has its seats arranged in clover leaf form and has true streamlines and torpedo rear end. Price range and equipment list are the same as for the touring car.

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Despite the low appearance of the new coupe, which has a lower body similar to that of the roadster, the height is the usual standard. This model will probably sell for $1,250

in that a silent chain, located at the rear of the cylinder block, instead of in the usual forward position takes care of these parts. This drive is entirely housed against oil leakage and is located between the cylinder block and the flywheel.

Due to this drive mechanism, the magneto, which is a Splitdorf, Model EU4, is mounted on a bracket attached to the gearcase housing, and in this position naturally protrudes through the inclined floor boards of the front compartment of the car. A metal plate goes over that portion of the magneto which comes through, and this may readily be removed for access to the ignition unit.

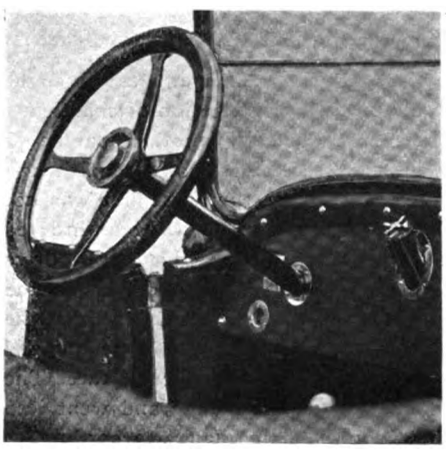
The lower part of the crankcase may be removed and permits of the inspection or adjustment of the connecting rod, crankshaft and camshaft bearings. The upper part is in unit with the cylinder block casting and thus the barrel form of crankcase construction which is common to American practice is attained. This design makes a very rigid construction and is another enemy to appreciable vibration.

Due to the manifold arrangement, the carburetter flange bolts directly to the opening at the center of the intake portion of the combination and there is the least possibe amount of exposed piping. The carburetter used is a Holley.

Lubrication is provided for by the conventional form of constant level splash system, there being a separate trough under each connecting rod to take care of the splash function, while the pump on the right side of the crankcase and operated by the camshaft keeps the troughs at the proper level. The lower part of the crankcase is the reservoir, and the flow is checked by the dash sight feed. Cooling is by thermo syphon and inlet and outlet connections are of large diameter to afford a free flow.

Although the flywheel is not enclosed, a substantial yoke passes around it on either side and these arms carry the gearbox. Thus the latter is virtually in unit with the motor, and a three-point suspended unit power plant construction is attained.

The clutch is of the leather-faced cone type and acts within the flywheel rim.



Spark control is effected by turning a central button on the steering wheel and a concentric ring serves to regulate the throttle

Back of it is a three-speed gearset of compact design. This is of selective type and has center control. The gears and shafts are made of chrome vanadium steel.

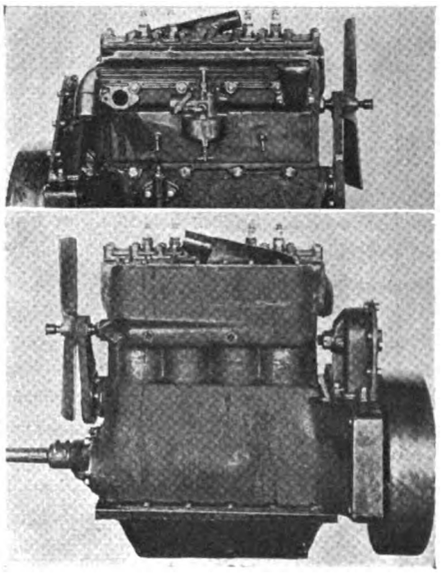
To the right of the gearbox and bolting to the right arm of the yoke passing around the flywheel is placed the combined electric cranking motor and generator, of Aplco make. This unit connects through a completely enclosed silent chain to the main drive shaft between the clutch and the gears in the gearbox. The ratio between this electric unit and the crankshaft of the engine is 2½ to 1.

As a motor the device will turn the crankshaft at the rate of about 150 r. p. m. and is unusually silent while doing it. The Aplco unit is of the 12-volt type and the battery, which is placed under the rear floor boards is rated at 12 volts and 35 amperes. Fourteen-volt side and tail lamps of two candlepower are fitted, while the single headlight is a 7-volt, 18-candlepower one.

The drive from the gearbox to the rear is through a torsion-tube-enclosed shaft equipped with a universal joint, also enclosed at the forward end. The tube takes the drive and the torque in the usual way, and the power goes direct to the bevel gears of the rear axle, which is of the floating type with live axles accepting only the drive. The weight of the car is carried on 4-inch Hyatt roller bearings and there is also a ball thrust bearing independent of the live axles. Although the standard drive ratio is 3¾ to 1, the purchaser may have a 4 to 1 ratio if he desires. The axle gears are also carried on Hyatt roller bearings of substantial size.

There are two internal expanding brake drums and shoes on each rear wheel, one operating from emergency and the other from the service brake control. Steering is on the left anud the mechanism is of the worm and gear type mounted upon a trunnion and forged from vanadium steel. Rather unusual spark and throttle controls are used on the steering wheel. These are not used with a lever and quadrant construction, but simple rotate on the steering post center. The spark control is a button which may be turned, while a large ring outside of it turns to effect control of the throttle.

The suspension of the Briscoe chassis is by means of semi-elliptic springs all around. In the rear, spring horns attach to the frame and take the rear ends of the long springs. Easy riding is claimed for the car due to the length of these members.



Both sides of the Briscoe 3⅛ x 5¼ block motor, showing cylinders cast with upper half of crankcase and integral manifolds.

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Dealer's Legal Status

Taxicab Operators Hedged by Many Liabilities—Must Be Courteous to Passengers—But "Fare Beater" Is Held to Be a Mere Trespasser.

By Geo. F. Kaiser

Taxicab owners seem hedged about with liabilities. It is required that they use due care to avoid injuring pedestrians or running into other vehicles on the road, and it also required that the taxicabs be in a good condition and in charge of a competent driver. Next there is a liability for any assault upon passengers made by the chauffeurs, or any altercation which may arise out of a dispute regarding the proper fare to be charged.

A Missouri court recently allowed a passenger in a taxicab to recover damages from a company because he had been cursed, abused and held up by the company on his refusal to pay a greater fare than that which the company's superintendent had stated the charge would be. The man had gone to a hotel taxicab stand in St. Louis and had asked the company's superintendent what the charge would be to be driven home. After the superintendent consulted his rate book he said it would cost $3.70.

Demanded More Than the Agreed Fare.

When a block away from his destination the taxicab became stalled and the passenger offered the chauffeur the $3.70 with the intention of walking the remaining block, but the chauffeur refused that amount, stating that $5 was due by the taximeter and that if he did not get that amount he would have to make it up.

The passenger refused to pay the $5 and the chauffeur became offensive, cursing him and laying his hands upon him and threatening to call a policeman. The passenger still insisted, however, that he would not pay more than $3.70, the price for which the superintendent had agreed to carry him, to which the chauffeur replied that he would now have to pay $5.20 instead of the $5, the 20 cents extra being a charge for waiting.

In the meantime a crowd had gathered, among which was the plaintiff's father, who finally came forward and paid the bill to settle the dispute. The passenger brought suit against the taxicab company for damages, because of the treatment he received at the hands of the chauffeur, and the court allowed him to recover, saying that the passenger had a right to damages because when the company's superintendent contracted to take him home for $3.70 it undertook to carry him safely and courteously, and having failed in that duty it must stand liable in damages. (Van Hoefen vs. Columbia Taxicab Co., 162 S. W. Western, 694.)

Chauffeur "Beat Up" a "Fare Beater."

This particular company seems to be unfortunate in its selection of chauffeurs, as it was sued by another passenger for a somewhat similar offense, although in the latter case the passenger was not successful. A man in St. Louis ordered a taxicab and told the chauffeur to drive to a good saloon. The driver started the taxicab and on reaching what he thought was a good saloon he stopped the car and demanded 50 cents fare. The passenger had no change and went into the saloon to get change, according to his testimony. The chauffeur, however, testified that the passenger went in to get a drink, and failing in that on his return boasted that he had never paid a cab fare in his life and never would.

At all events, the chauffeur finally struck the passenger on the head and knocked him unconscious.

Court Held Licking Was Justified.

Upon regaining consciousness, one of his first acts, of course, was to sue the taxicab company. But the court held that when one endeavors to "beat" a taxicab chauffeur out of his fare he is not a passenger in a true sense, but a mere trespasser, and as the company is only liable for injuries to passengers, a trespasser cannot recover money damages for an assault by a chauffeur. (Farnoff vs. Columbia Taxicab Co., 162 South Western 699.)

From the above cases it is seen that taxicab owners are not only under obligation to provide a safe vehicle and a driver competent enough to avoid injuring other people, but must also see to it that their passengers are not assaulted or abused by the drivers, for the courts have decided that the owner of an omnibus line and the proprietor of taxicabs are common carriers just as much as an owner of a railroad or line of boats.

It is so well understood that railroad companies and steamboat companies, etc., are liable to their passengers for any assaults or attacks made upon them by their employes, that this phase need not be further mentioned here.

In Accident, May Sue Either Party.

It must always be understood, however, that when a person hires a public hack or motor car and a driver is furnished, and he tells the driver where he desires to go without giving any specific directions as to the manner or mode of driving the car, he is not responsible for the driver's negligence. If he is injured because of a collision between the hack or motor car in which he is riding and some other vehicle, he may recover money damages from any party through whose negligence the accident occurred.

In other words, he may decide whether to sue the owner of the vehicle in which he is riding or the person owning the other vehicle, and even though the chauffeur or driver of the motor car or hack in which he was riding at the time of the accident is himself negligent, that fact will not prevent the passenger from recovering damages against the other driver if the other was also negligent.

It may seem strange at first thought that if you are injured while riding in a taxicab that you can sue the other party even if your own driver is just as much at fault as he, but when we take into consideration the fact that you have no more control over him than over a street railway motorman or a locomotive engineer it is easy to see that it is only proper that you should have this right.

If I sell a used car to a man and insert the words "as is" in the contract, what claim has he against me if he finds any broken parts, etc.?

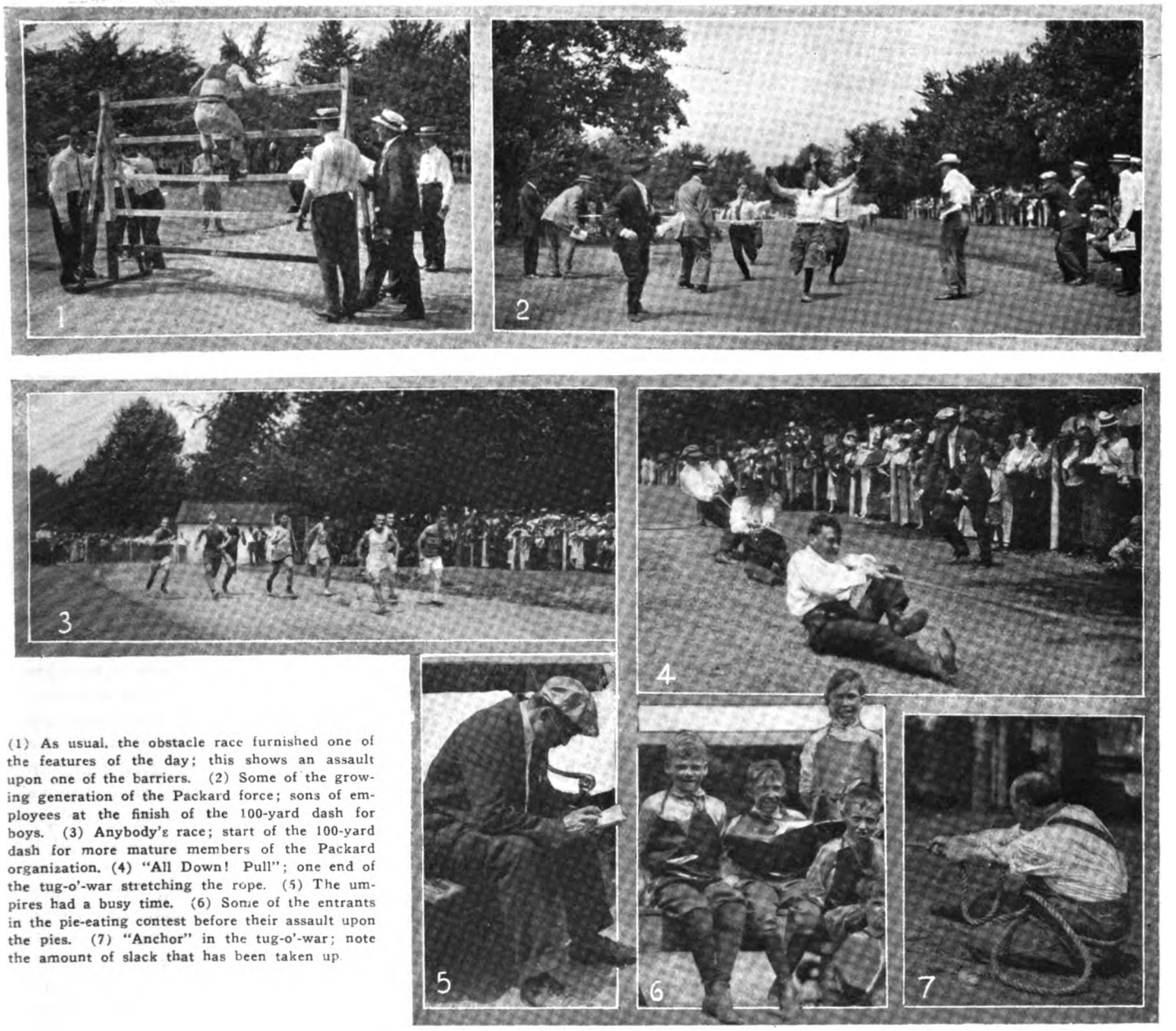
J. A. B., Brooklyn, N. Y.

When a used car is sold to someone "as is," the party buying agrees to take it in the condition it is at the time of the sale. If there are no warrantees or representations on the part of the dealer as to the condition of the car or its fitness for any particular purpose, the purchaser can make no claim for any defects which he afterward discovers. He has agreed to take the car as it stands and must live up to his agreement without complaint.

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6,000 Packard Employees at Bob-Lo Outing

Three Steamers Required to Carry Happy Crowd on Annual "Playfest"—Day Given Over to Athletic Events.



(1) As usual, the obstacle race furnished one of the features of the day; this shows an assault upon one of the barriers. (2) Some of the growing generation of the Packard force; sons of employees at the finish of the 100-yard dash for boys. (3) Anybody's race; start of the 100-yard dash for more mature members of the Packard organization. (4) "All Down! Pull"; one end of the tug-o'-war stretching the rope. (5) The umpires had a busy time. (6) Some of the entrants in the pie-eating contest before their assault upon the pies. (7) "Anchor" in the tug-o'-war; note the amount of slack that has been taken up.

THE annual outing offered to all the Packard employees by the Packard Motor Car Co. was held at Bob-Lo, August 10, and as usual was a very big affair at which a total of about 6,000 of the company's working force took part. Three of the largest Detroit river steamers were used to transport the happy crowd to Bob-Lo and bring them back home again.

The features of the day were the various athletic contests, such as inter-department relay races, dashes and obstacle races, fat man races, races for small boys and for women. One of the events which was most successful, and a novelty, was a pie-eating race for small boys. There were also swimming races and other events in the water.

On account of the heavy rain the baseball and soccer games could not be held in the open and were replaced by the followers of Terpsichore in the dancing pavilion.

Raybestos Men Gather at Factory.

The semi-annual summer convention of the Royal Equipment Co. was held all last week at the Bridgeport (Conn.) factory.

The Raybestos company's three district representatives, E. Wales, Chicago; A. P. McAlleese, Pittsburgh, and H. F. Sa[illegible]rn, Bridgeport, attended. The gathering was largely in the nature of a "get together" meeting and was for the purpose of laying plans for the coming year. Sales Manager R. Everett and President S. Simpson presided at the meetings. The next gathering wi[illegible] be held during the New York show in January.

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Care of Overland Starting System Is Simple

Lamp Loosened by Vibration May Cause Trouble That Is Hard to Locate.

Fill Battery Regularly With Distilled Water—Be Sure to Cover Plates.

In the Overland 1914 car the Gray & Davis electric lighting and starting system is installed, the layout being as shown in the accompanying illustration; for the sake of clearness the dashboard is shown as if laid flat on the chassis. The diagram makes it easy to trace the wires and cables from one terminal or connection to another.

If there is trouble with one or more individual lamps which refuse to burn for no apparent reason, see if they are firmly seated in their sockets. Vibration may loosen them so that they do not make proper contact, and in such a case they need only to be tightened. Remember that each lamp has its individual ground connection, so that trouble with one lamp need not cause trouble in another.

Examine the Fuses.

The only exception to this is in the case of the tail light, which is in series with the dash lamp. This is done with a purpose, for if the tail light goes out it will extinguish the dash lamp, warning the driver immediately. On the other hand, if the dash lamp burns out it will extinguish the tail lamp. In other words, if one lamp is out both must be out, and if one burns the other should burn.

If the lamps are not burnt out and are properly seated but still refuse to burn, examine the fuses to see if they are blown, and, if they are not, look to the fuse connections, which may be loose.

These are the things that are most likely to give trouble. It must not be understood that these points are to be looked upon as sources of constant annoyance. They are not, and if the ounce of prevention is used the cure will rarely be needed.

A mistake that is not infrequently made is to replace a burnt-out or broken lamp with a new one of the wrong voltage. If a lamp of high voltage is put in it will burn dimly, or perhaps hardly burn at all, because the resistance of the filament is so great that the 6 volts of the Gray & Davis system cannot push through.

On the other hand if a lamp of too low voltage is put in it will offer so little resistance that it will either flash up brilliantly for a few seconds and then burn out of it will permit such a flow of current that the fuse will instantly burn out. The conclusion is obvious; only the lamps specified as being suitable should be used.

Flickering Lamps — Loose Connection.

A lamp that flickers out more or less frequently, burning normally between flickers, indicates a loose connection affected by vibration. See that the lamp is firm in its socket, examine the fuse connections and if these are in normal condition look for loose connections elsewhere in the circuit. The accompanying diagram makes it easy to see just where the various wires lead and to examine such connections as are in the circuit of the lamp that gives trouble.

If the lamps burn properly when the car is standing or running slowly but grow dim when the car is speeded up to the point where the generator cuts in and supplies the lighting current and relieves the battery it indicates that the wires leading to the generator have been wrongly connected. Of course this will not happen unless the wires have been disconnected, which should not be done unless there is a very good reason for it. As the wires have differently colored insulation there is no difficulty in putting them where they belong, as the diagram shows.

If the fuse "blows out" when the proper lamp is used, it indicates that the wire leading from that fuse is carrying too much current, and therefore it must be short-circuited or grounded, giving a path for the current that is easier than the normal path through the lamp or whatever it may be.

Beware of Short Circuits.

The wire must be examined from the fuse to the lamp and the fault corrected. It may be found that a scrap of wire has established an accidental contact between a bare terminal and part of the car frame, or that the insulation has been destroyed, letting the wire itself ground, or that a terminal has become detached and dropped on the frame or some other metal part. The remedy is obvious.

A partial ground may have the effect

"FIRST AID" TREATMENT FOR OVERLAND SYSTEM

Individual lamps will not burn.—Look for lamps loose in sockets, burned out filaments or blown fuses.

New lamp will not burn when properly inserted, though other lamps burn.—Lamp not of proper voltage.

Fuse blows out as soon as current is turned on new lamp—Voltage of lamp is too low.

Lamps flicker.—Look for loose connections at fuses; if fuse connections are right look for loose connections elsewhere. Tighten lamps in sockets.

Lamps grow dim when car is speeded up.—Wires wrongly connected at dynamo.

Lamps will not burn with engine dead.—Look for blown fuses, exhausted battery or defective wiring.

Lamps will not burn with engine running.—If fuses and wiring are right look for generator out of order.

Battery gradually weakening, causing lamps to grow dim.—Look for short circuit or ground.

One lamp will not burn.—Look for trouble between switch and lamp or in lamp.

No lamps will burn.—Look for trouble between battery and switch or in battery or generator.

Motor cranks engine feebly.—Look for almost exhausted battery; see if generator delivers current to battery; look for loose connections.

Motor will not crank engine.—Look for exhausted battery, blown fuses or interrupted circuit.

Battery weak though little or no current has been used.—Look for short circuits or grounds.

Battery not charging generator properly.—Look for commutator in need of cleaning.

Battery gets no current from generator.—Test generator and examine wiring.

Battery weak and sluggish though getting plenty of current.—Look for low electrolyte in cells.

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of dimming the brightness of a lamp without blowing a fuse, because the escaping current will be heavy and the battery will soon run down, regardless of light service and ample charging.

If a fuse blows out do not replace it before locating the cause; otherwise the new fuse will simply go in the same way. If the blown fuse is in a lamp circuit, turn the lighting switch to the "all on" position. After removing the fuse touch the terminals of the test lamp to the fuse clips. If the lamp lights the ground is still there and must be removed.

In case of failure of a lamp to burn when turned on, try all the lamps. If all fail to burn the trouble is somewhere between the junction switch and the battery. If only one lamp fails to burn the trouble is between the switch and that lamp, or in the lamp itself.

How to Make Test Lamp.

For testing for not easily located faults in the electrical system a test lamp is valuable. It consists merely of a lamp of the kind used on the car, in a socket with two wires, each 6 or 8 feet long, properly connected to the socket and with their opposite ends bared or provided with spring clip terminals such as commonly are used on ignition wires.

To use the test lamp to test the battery, place the terminals in contact with the battery terminals to which the cables are attached. The lamp should burn with full brightness. If it does not, the battery is at fault, the fault in most cases being need of charging. Test each cell separately by placing the test terminals on the two terminals of each cell. The lamp should burn dimly. Try each cell; the brightness of the lamp should be the same for all three.

If one cell is weak, examine it to see if electrolyte is right and compare hydrometer readings with the other cells. Charge fully and if possible give a slow over-charge of several hours and test again. If the weak cell has come nearer to the others continue the over-charge. If there is no improvement consult an expert.

When the Battery Runs Down.

A run-down battery may result from excessive use of lamps or starter with insufficient running of the generator to recharge, or from a short-circuit or a ground somewhere in the system. If it is decided to remove the battery for expert treatment, disconnect the cables and wrap the terminals carefully with tape and tie them up somewhere so that they cannot get adrift. The generator ought to furnish current for the lamps when the car is running 12 miles an hour. Try it.

A weak battery and a generator that does not generate properly at or over a car speed of 12 miles an hour indicates generator trouble.

Removing the Generator Unit.

To remove the generator disconnect the three colored wires and connect together the central wire, which is yellow, and the black wire, making sure that the contact is good. Tape the joint so there will be no exposed metal. Tape over the termini of the third wire so that it cannot make metallic contact with anything and make fast all the wires so they will not come loose.

This will leave the system to work on the battery alone; when it is exhausted it must be recharged from an outside source of current. Under such conditions it is easy to over-discharge the battery, and care should be taken not to do so.

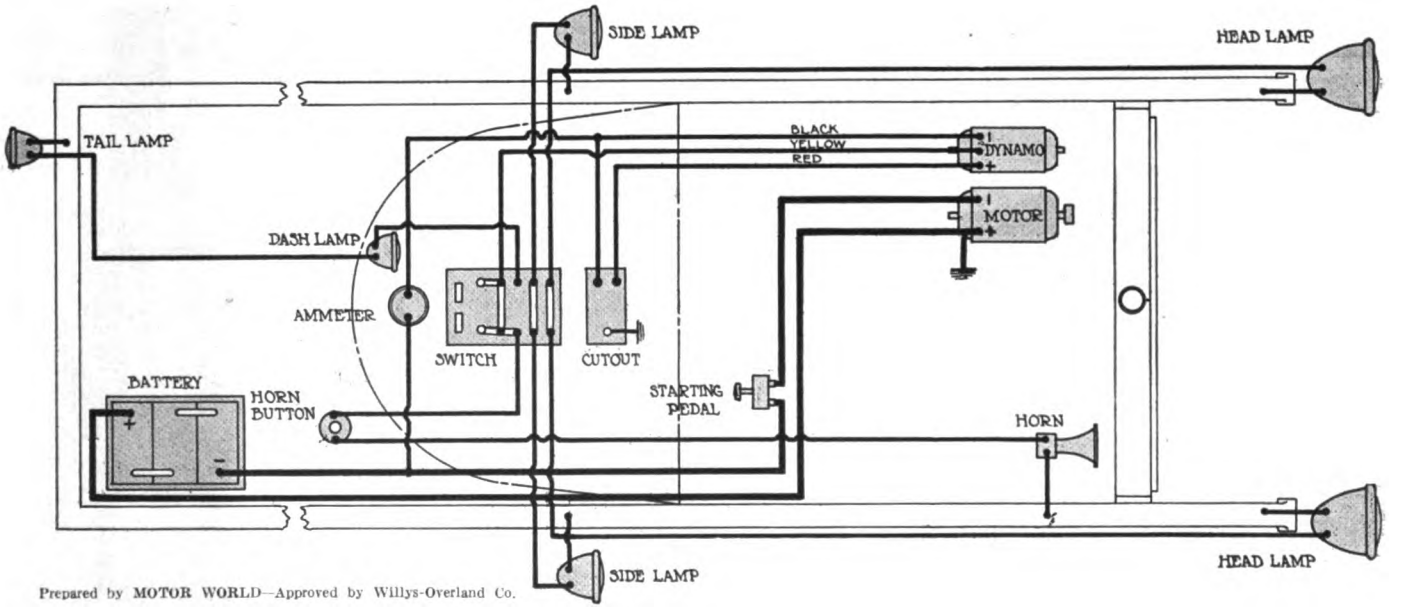
The battery solution should always be well above the tops of the plates, and if the plates show above the solution distilled water—and nothing else—should be added till they are submerged. Filling one cell does not fill the others, as they are in three distinct jars, each of which must be filled by itself. Plates exposed to the air deteriorate rapidly.

When the battery is fully charged the electrolyte—battery fluid—should test between 1,275 and 1,300 on the hydrometer scale. If the battery is not fully charged the reading will be lower. If the battery needs water the reading will be too high because of the concentration of the fluid from which the water, but not the acid, evaporates. Examine battery terminals with particular care, looking for looseness and corrosion.

Commutator Should Be Clean.

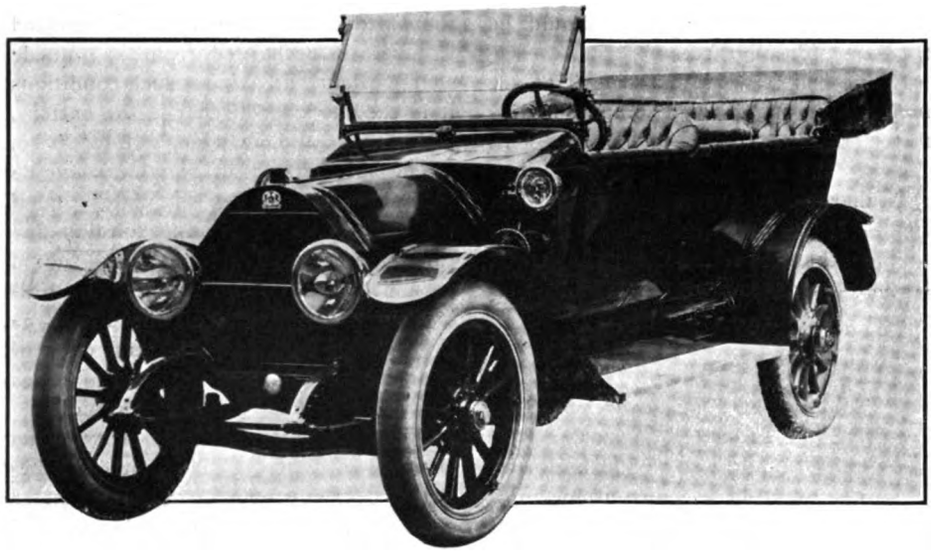
Failure of the generator to deliver sufficient current to the lamps and the battery may result from dirt on the commutator, which, of course, should be cleaned; at the same time the brushes should receive attention, as they are likely to be as dirty as the commutator. Make sure that the brushes are perfectly free in their holders and that they are not worn down short.

The commutator may be cleaned easily by holding a piece of No. 00 sandpaper lightly against it while the motor is running. Never under any circumstances use emery cloth or paper for the purpose.



It is a simple matter to trace any of the various wiring circuits in the 1914 Overland-Gray & Davis lighting and starting system; the dash is shown as if laid flat to help make plain the drawing

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A deep cowl houses the gasolene tank and serves to support the instrument board mounting speedometer, clock, gauge, switches, etc.

PRINCIPAL DETAILS OF THE LYONS-KNIGHT FOR 1915.

Price:	
5-passenger	$2,900
7-passenger	2,980
Limousine	4,300
Sedan	3,900
Make of motor	Lyons-Knight
Number of cylinders	Four
Shape	Knight
How cast	Pairs
Bore	4.5
Stroke	5.5
S. A. E. rating	33.4
Magneto	Simms
Carburetter	Stromberg
Starting-lighting	North East
Clutch	3-plate
Gearset	3-speed
Wheelbase	130
Tires	37 x 5
Wheels	Wood
Steering	Left
Control	Center
Type rear axle	Floating

Equipment: Top, windshield, speedometer, Jiffy or Collins curtains, Manzel power pump.

Wire wheels extra.

Lyons-Knight Bodies Refined

Mechanical Alterations Are Few and Equipment List Has Been Lengthened—Underhung Worm Retained.

MANY body refinements without changes in essential features mechanically, mark the Model K Lyons-Knight which is continued for the 1915 season. The Lyons-Atlas Co., Indianapolis, Ind., offers four bodies on a single chassis, the prices remaining the same as 1914. The seven-passenger touring car sells for $2,980, the five-passenger for $2,900, a five-passenger sedan at $3,900, and a seven-passenger limousine at $4,300. In addition, two-passenger roadsters are built on special order.

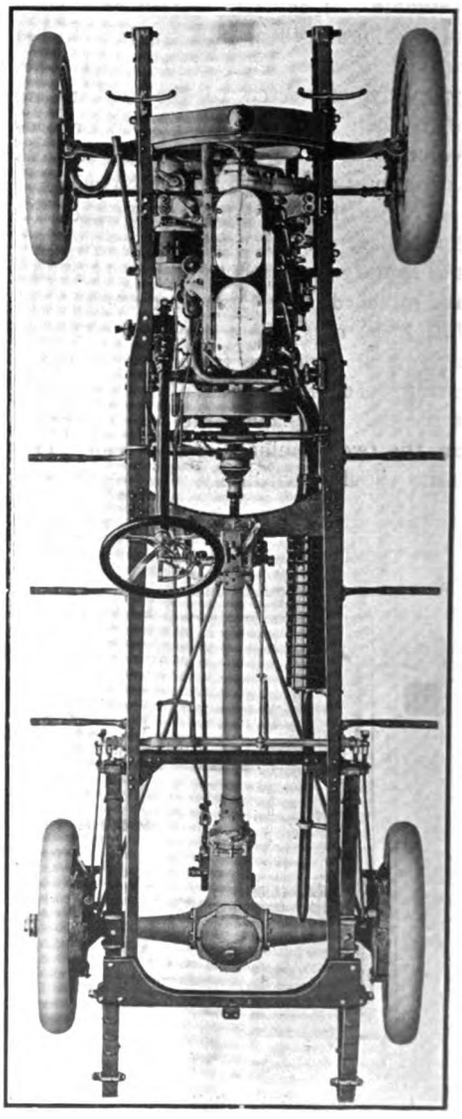
All these bodies are mounted on the characteristic Lyons-Knight chassis, which is featured by its sleeve valve engine and worm drive. The chassis has a wheelbase of 130 inches, with 37 x 5 tires, non-skid in the rear. The chief changes in the new cars are the better lines on the bodies; the five- and seven-passenger bodies are of a modified streamline type with the upholstering carried along the tops of the doors, giving a straight line effect from front to rear. The sides are unusually high and both front and rear seats are rather wider than usual, the latter being 52 inches.

All instruments, such as speedometer, clock, gasolene gauge, oil pressure gauge, ignition and lighting switch, and so on, now are mounted flush with the instrument board; a convenient feature of the lighting control is a switch, which may be locked in any combination of lights. Equipment is somewhat more complete than formerly and consists of a Golde one-man top, an option of Jiffy or Collins curtains, Warner speedometer, a combination double tire holder and trunk rack, two extra demountable rims, and Manzel power tire pump.

Mechanically there is no change in the car. The Knight engine, which is manufactured by the Lyons-Atlas company, is a four-cylinder, 4½ x 5½, and although the S. A. E. rating is but 33.4, factory tests have shown that it develops 52 horsepower at 1,200 r. p. m., and a maximum of 76 at 2,000. The cylinders are cast in pairs and the crankcase, chain case and cylinder head covers are cast of aluminum. The feature of covering the cylinder heads to keep out dirt and moisture and to protect the spark plugs is exclusive with the Lyons-Knight engine.

Hard rubber buttons are mounted on the covers, by which the spark plugs can be short circuited and tested without removing the covers.

Crank and eccentric shafts are carried on five bearings and fitted with adjustable bronze bushings, babbitt lined. These two shafts, as well as the connecting rods, are heat treated chrome nickel steel. The eccentric shaft, together with magneto pump, starter and fan, are



Clean design is a feature of the Lyons-Knight chassis; note underhung worm

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driven by silent chain in order to do away with possibility of noise from the timing drive.

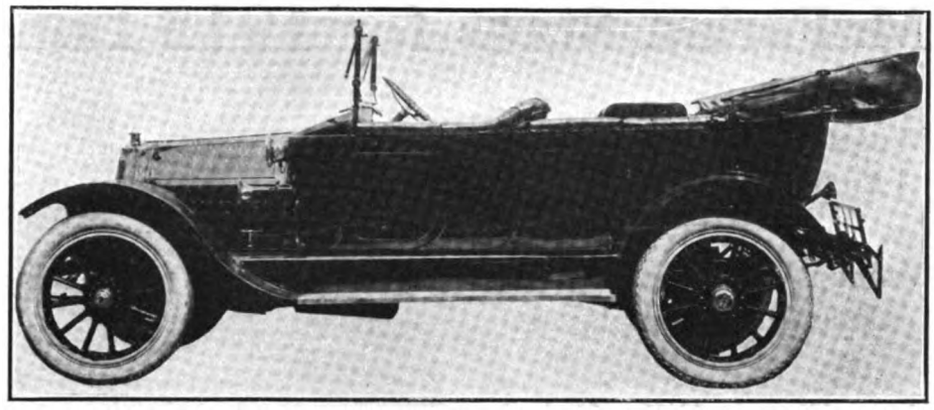
Lubrication is by force feed to all bearings, pistons and sleeves. An oil reservoir is located in a sub-base of the crankcase, having an intermediate air space to prevent overheating of the oil. A plunger pump, operated by one of the sleeve eccentric rods, takes the oil from the reservoir and forces it under pressure to the crankshaft and eccentric shaft bearings, the eccentric rod bearing and thence through holes drilled through the center of the crankshaft to the connecting rods.

The connecting rods are hollow and the oil is forced through their interior to the upper bearing. The piston pins likewise are hollow, and the oil flows through to the outside of the piston, thence through holes in the sleeves to the cylinder wall, so that all friction surfaces are lubricated by a positive flow. An adjustable oil pressure regulator is connected with the throttle lever so that the pressure of the oil is in proportion to the engine speed at all times.

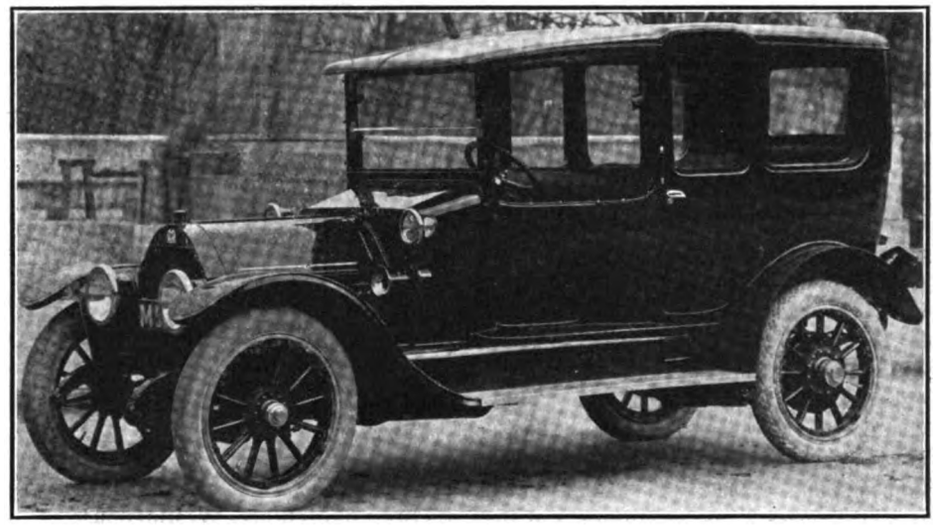
Ignition is furnished by a Simms dual, high-tension magneto of the waterproof type. Cooling is by a centrifugal pump, honeycomb radiator and a four-blade cast aluminum fan, which is operated by a silent chain. Following the European custom, the fuel tank is mounted in the dash cowl, giving a gravity feed to the specially designed Stromberg carburetter.

Cranking and lighting are effected by a single unit North East system, which is connected directly to the front end of the crankshaft by a silent chain. A simple foot button connects the starter, and when released converts the motor into a generator for charging the storage battery, the latter furnishing current for the starter, the lighting equipment and the electric horn.

From the motor, power is transmitted through a three-plate dry disk clutch, three-speed selective gearset, worm final reduction and floating axle. The clutch is inclosed in the flywheel, the single central floating member engaging by being gradually compressed between the two outside plates through the action of three powerful toggle joints. A special bronze casting is used for housing the gearset, differential and worm gear, which are in unit, and to which is attached the seamless steel tubing on which the wheels are mounted. Differential case and wheels are fitted with Timken bearings. The 3-inch torsion tube encloses the drive shaft and terminates in a large, hollow bronze ball and socket joint at the forward end and is attached to the heavy center cross-member of the frame.

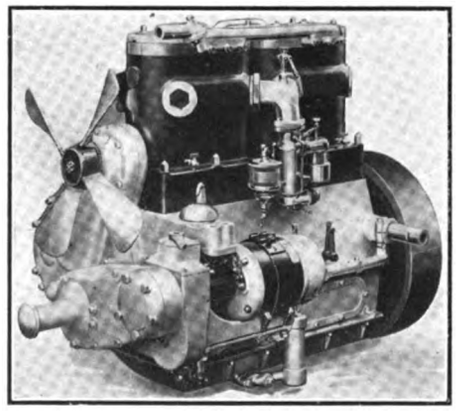


In the standard touring model the sides are unusually high and both front and rear seats are wider than heretofore; upholstery is carried along tops of the doors



The slightly arched door in the seven-passenger limousine adds a touch of distinctiveness; all Lyons-Knight cars are driven from the left side, control being in the center

One of the main features of the Lyons-Knight design is the worm drive. This is of the underslung type and runs in oil. In spite of the fact that the worm is underneath, it has a clearance of 10 inches, which is ample for all ordinary road conditions.



A cast aluminum housing covers the spark plugs; this is an exclusive feature

Suspension is by three-quarter elliptic springs at the rear, 54 x 2½ inches in size, and one-half elliptic springs in the front, 38 x 2½ inches, all ends being provided with bronze additions to give easy replacement in case of wear after long use.

All models are equipped regularly with wood wheels, which carry demountable rims, accommodating either straight or clincher tires. Expanding and contracting brakes act on 16 x 2½ drums.

While wood wheels are standard equipment, wire wheels may be had at an advance in price.

Towing Illegal in New Jersey.

It is against the law for an automobile to tow another kind of a vehicle, according to an opinion given to the Motor Vehicle Department of New Jersey by the Attorney General last week.

The opinion was given in the case of Richard Wycoff, who operates a bus line between Oceanic and the Highlands. In the rear of the machine a stage coach is attached, which it is asserted, obscures the license number.

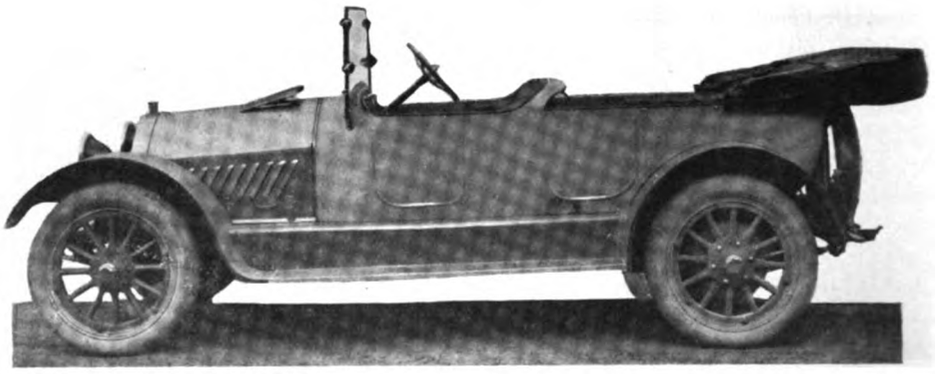
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McFarlan Sixes for 1915 Longer and Lighter

Westinghouse Starting, Lighting and Ignition.

Vacuum Gasolene Feed and Cone Clutch Employed.

Two Chassis Differ Only in Sizes of Engines.



Though the wheelbase of the McFarlan has been increased from 128 to 132 inches and the body enlarged, the total weight has been reduced 300 pounds. The price is $2,590 or $2,900, according to motor size

The new McFarlan models, which are produced by the McFarlan Motor Car Co., Connorsville, Ind., have been altered and improved in a number of important particulars, though none of the changes have been deemed of sufficient radicality to necessitate a change in the designation of the two models. As heretofore, two chassis will be built, or rather it is one chassis with two motors. The larger motor has a bore and stroke of 4½ x 6 inches and the smaller a bore of 4 inches, the stroke being the same. The chassis carrying the larger motor still is designated series X, the price for open bodies being $2,900; the smaller model is styled series T, as heretofore, and the price with open bodies is $2,590.

The most important changes which have been made include a lengthening of the wheelbase by 4 inches to 132 inches; a reduction of 300 pounds in weight; the adoption of the Stewart vacuum gasolene feed; a new arrangement of the gear shift and brake levers; the adoption of Westinghouse electric lighting and engine starting equipment; a new cone clutch; new body lines and a new tire carrier. As heretofore, equipment is complete.

In appearance, the new models will be quite a little different from their predecessors, the principal change being due to the lengthened wheelbase. The bodies are longer, as a matter of course, and now are set lower than heretofore. The upholstery does not project above the body lines at any point and the top line extends clear around practically without a break. Another distinctive feature is the addition of a miniature cowl at the back of the front seats. In addition to affording a measure of protection to those who occupy the tonneau, this cowl also serves a practical purpose in that it houses a small compartment suitable for goggles, gloves, etc. At the same time, the extra seats in the tonneau fold down beneath this compartment in such a way that no part of them projects into the doorway.

SPECIFICATION DETAILS OF McFARLAN SIXES FOR 1915

Price—	Series T	Series X
Touring	$2,590	$2,900
Roadster	2,590	2,900
Coupe, 4-pass	3,300	3,610
Limousine	4,000	4,310

Colors: Blue black, emerald green and golden brown.
Make of motor.....McFarlan
Number of cylinders.....Six
Shape .....T-head
How cast .....Block

Bore	4	4½
Stroke	6	6
S. A. E. rating	38.4	48 6

Ignition .....Westinghouse
Carburetter .....Stromberg G-3
Starting-lighting Westinghouse
Clutch .....Cone
Wheelbase 132
Tires .....36 x 4½
Wheels .....Wood
Steering .....Left
Control .....Center
Type of rear axle..Full floating

Options: McFarlan air or Westinghouse electric starter; one-man top.

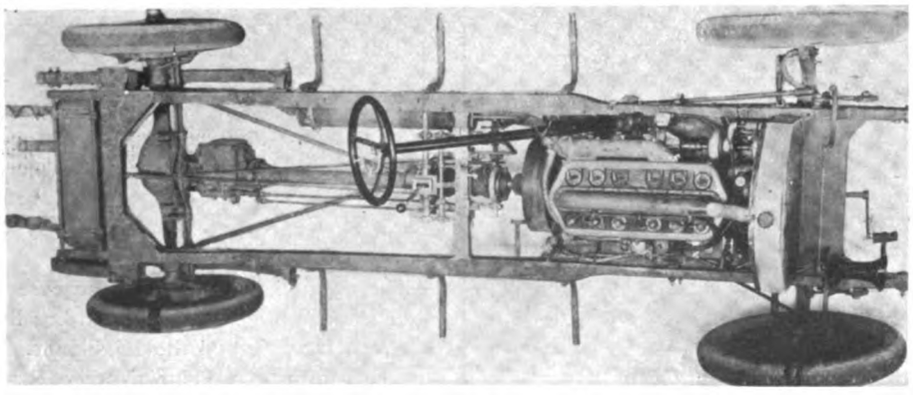
Equipment: Top, curtains and windshield, Hartford shock absorbers, Warner speedometer, power tire pump, headlight dimmer, cigar lighter, inspection lamp, Klaxon horn, Firestone demountable detachable rims, tools, etc.

Mechanically, not a great number of changes have been made, the more important ones being the adoption of the Westinghouse electric lighting, starting and ignition system and the substitution of a light cone clutch for the multiple disk member that has been used in the past. Although the Westinghouse apparatus now is standard equipment, the McFarlan pneumatic starter will be fitted where specified.

The two units of the Westinghouse system are mounted on opposite sides of the motor, the generator being on the intake side and the motor on the exhaust side; both are in accessible positions. The generator unit carries the distributer for the ignition system, the current for which is drawn from a storage battery.

All of the wiring of the electric system has been thoroughly enclosed in flexible conduits; there is not an exposed wire on the car; these conduits are both dust and oil-proof.

The adoption of a cone clutch marks quite a departure from previous McFarlan practice and has been done with three



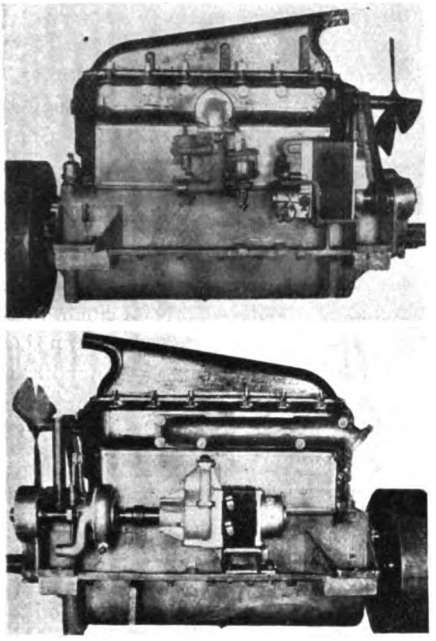
The chassis, though lengthened, shows only detail changes, such as in control lever arrangement, clutch design, starting-lighting equipment, brake equalizers, etc. Two sizes of motor are fitted

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objects in view. (1) To simplify the chassis; (2) to lighten the weight; and (3) to provide greater holding surface.

The new member is a 16-inch leather-faced cone, the face being 4 inches wide. Beneath the leather there are 12 flat spring which are adjustable.

In the arrangement of the gear shift and emergency brake levers McFarlan engineers have solved a problem that



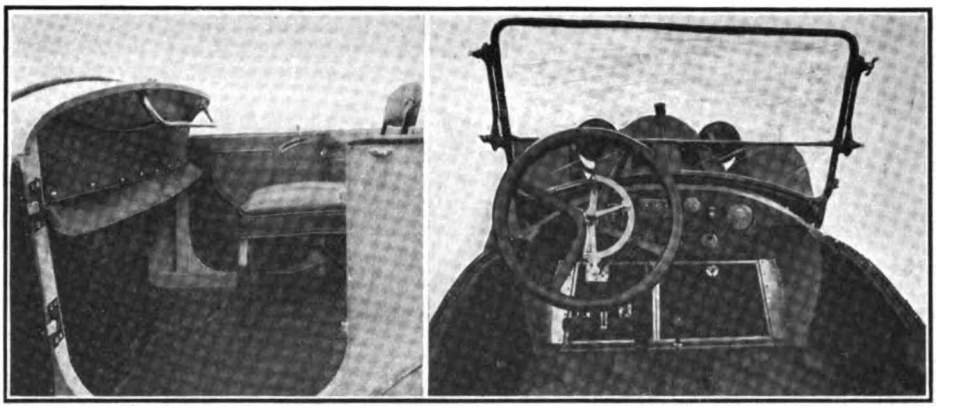
Right and left views of the motor. Both sizes are alike except that the bore of one is 4 inches and the other 4½. Both have 6-inch stroke

long has existed. The placing of these two levers in the center of the foot board has not been easy because one is likely to interfere with the other. In the McFarlan arrangement, however, there can be no interference.

The gear shift lever is placed directly between the front seats and does not extend above them. Thus, it can never be in the way. The brake lever is quite separate and is set well forward where it, too, is out of the way though it is instantly available.

Although the weight of the car has been reduced by as much as 300 pounds, this has not been done by sacrificing the factor of safety. The chassis has been practically unchanged. Instead, the improved body construction throws part of the strain upon the metal parts of the framework, with the result that bodies now are much lighter than heretofore.

Another little change in construction, designed for the convenience of the owner, is the adoption of a new style tire carrier. As heretofore, the spare tires are carried at the rear of the body but instead of being held by four straps which must be loosened, but one is used.



Left, rear compartment, showing tonneau cowl and recesses into which seats fold. Right, front compartment showing brake lever set forward out of the way and ball-handled gear lever between the seats

Truck Club Holds Annual Outing

Jolly Day at Bath Beach, L. I., Enjoyed by 79 Members and Guests—Both Teams Lose in Hotly Contested Baseball Match.

Twenty-two ladies and 57 gentlemen, members and guests of the Motor Truck Club of America, New York division, attended the third annual outing and field day of that body Wednesday afternoon, August 19. The event occurred at the Marine and Field Club, Bath Beach, L. I., and was a great success. Two trucks conveyed such of the members and guests as appeared at Borough Hall, Brooklyn, between the hours of 1 and 2 P. M., the first to depart being one of the earliest models of Hexter gasolene-electrics, equipped with an enclosed body bus. The other was a two-ton Indiana truck with a platform body.

The first event was a baseball game between teams which spontaneously rallied around George H. Duck, president of the club, and David C. Fenner, ex-president, as captains. As formerly, the game was umpired by Ellis A. Howland, secretary of the club. Following the game, which resulted in defeat of both sides, the hardier members of the ag gregation indulged in aquatic feats. After the sunset gun was fired, all hands lined up for a group picture and repaired to the second floor balcony for a shore dinner followed by dancing.



Snapped at the Motor Truck Club outing. Left to right: D. C. Fenner, T. A. Aspell, Charles E. Stone, George H. Duck, Ellis A. Howland (with the big stick) and Arthur J. Slade

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RECENT DEVELOPMENTS in ACCESSORIES

Mechanical Starter For Ford Cars.

Though the cranking of a Ford car is not a difficult matter, under some circumstances it is decidedly unpleasant. Whatever difficulty there is is largely reduced and the unpleasantness eliminated by the mechanical starter brought out by the Auto Parts Co., Providence, R. I.

The starter is operated by pulling up a handle on the dash, which can be done from the seat. Connection with the crankshaft is made through a chain running over pulleys and actuating a lever which acts on the crankshaft through a clutch. A coil spring returns the lever and the operating handle at the end of the working stroke. After the device has been applied, the only part visible is the handle on the dash. The starter can be applied without machine work, without drilling holes and without defacing the dash. The price is $15.

Headlight Directing Device.

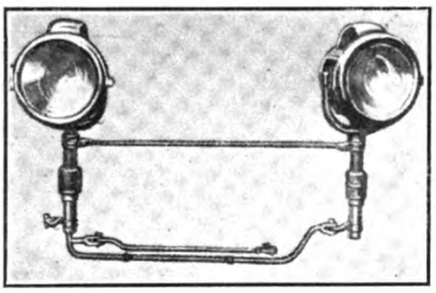
A device which makes it possible to turn the lights of a car in the direction in which the car is turning has been placed on the market by the Automatic Lamp Control Co., 423 East 1st street, Dayton, O. Two swivel brackets carry the headlights and are connected by means of a drag link so that the lamps swing when the steering wheel is turned.

The connections are so worked out that the road is illuminated in the direction in which the wheels point, and in turning a corner it is possible to see if there is any obstacle in the way. Where lamps are stationary the light does not illuminate the road in this way, but leaves it in darkness until the car has made the turn.

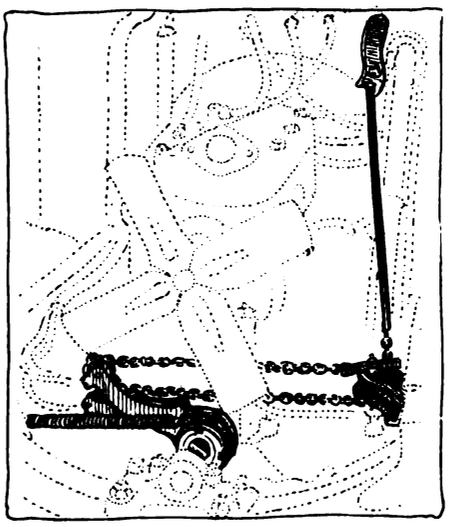
The makers state that the device can be attached to any car in half an hour and that the only tool needed is a wrench. The price is $25.

Star Portable Vulcanizer.

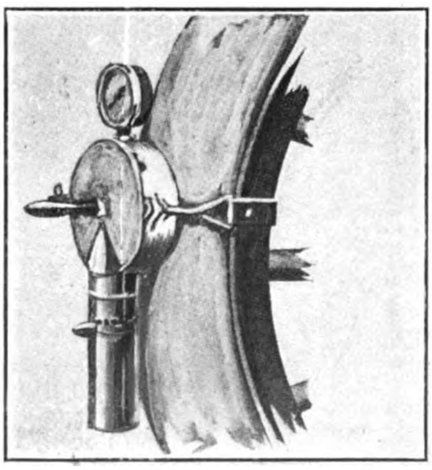
A portable steam vulcanizer which, while of the small tool-box type, has features not ordinarily found in such devices, is made by the Star Vulcanizer Mfg. Co., Columbus, O. Its general design is quite distinctive, as the accompanying illustration shows. It is a diminutive boiler heated by a burner below, wood alcohol being recommended as the fuel. A gauge is provided for indicating the temperature of the steam.



A drag link causes both headlights to swing with the steering wheels in the Automatic Lamp Control



A handle at the dash permits a Ford motor to be started from the seat — Auto Parts starter



The Star portable vulcanizer burns alcohol and the steam pressure is indicated on a gauge

The vulcanizer can be used for casing or tube work and has a strap with wing nuts for clamping it to a tire in place on the wheel. The list price of the Star outfit is $8.

Breeze Company's New Products.

A new catalog his just been issued by the Breeze Carburetter Co., 254 South street, Newark, N. J., in which some new Breeze products are described. The Breeze company has taken up the manufacture of flexible shafts for all purposes where such shafting is required, and makes all sizes from ⅛ inch to ¾ inch, capable of transmitting from 1/20 up to 1 horsepower. Both monocoil and multicoil shafting are made, the latter being of higher quality and naturally selling at a higher price.

The prices on the multicoil shafting vary from 60 cents per foot for ⅛ inch to $3.75 per foot for ¾ inch. Shafting casings, couplings of various kinds, flexible metallic hose and similar products also are manufactured. A large part of the catalog is devoted to various Breeze carburetters, fuel strainers and kindred articles.

Electric Tools Coming From Milwaukee.

For the purpose of producing an extensive line of electrical tools for garages, machine-shops, foundries, etc., the International Electric Tool Co. has been formed in Milwaukee, Wis. William R. Sorgel is president, William H. Gaulke, vice-president and secretary, and E. K. Rundle, treasurer.

Three More Remy Service Stations.

The Remy Electric Co., Anderson, Ind., has appointed three new dealers its accredited service stations. These ininclude D. F. Holliday & Co., 344 North Delaware street, Indianapolis, Ind; Perry-Mann Electrical Supply Co., Columbia, S. C., and Washington Auto Supply Co., Seattle, Wash.

Parts and Accessories Show for Wichita.

Wichita, Kan., motor car and accessories dealers have decided to promote an automobile, parts and accessories show, to be held in the Forum in October. It is said that an application for permission to hold the exhibition has been made to the national organization in New York.

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In Salesroom and Garage

The Sears Auto Repair Shop has removed to larger quarters at 2122 East Washington street, Indianapolis, Ind., having secured the Indianapolis agency for the Westcott. Accessories also will be stocked.

The Southern Motor Car Co., New Orleans, La., has taken over the Lozier agency for New Orleans and all of Southern Louisiana and Mississippi.

The Auto Service Station has been opened at 5881 Delmar boulevard, St. Louis, Mo. Edward E. Martin and Raymond Bedell are the proprietors.

A two-story garage, 50 x 90 feet, is being erected for Peter Holt in Boscobel, Wis. The second floor will be devoted to repair work and dead storage.

Joseph P. and Fred Parmentier have entered the motor car supply trade in Green Bay, Wis.; bicycles and motorcycles will also be stocked.

Under the style Decker Rubber Co., G. W. Decker will conduct the business previously operated by Arthur L. Stone at 8th street, Erie, Pa.

A. H. Voltz has leased the machine-shop of Wagner Bros. on Pine street, Burlington, Wis., and purchased the materials and stock.

John Reese has let the contract for a garage on West Market street, Pottsville, Pa.; it will have accommodations for 200 cars.

A commercial garage, 50 x 70 feet, is being erected for Henry Blesswenger at Chadwick avenue and Jeffry place, Newark, N. J.

C. L. McGraw has secured the agency for Imperial motor cars in Bloomington, Ill. He is located at 405 Woodland avenue.

The Martin Motor Sales Co., 23 3rd avenue South, Minneapolis, Minn., has been appointed agent for the Zip cyclecar.

E. C. Clinkscales, Ford dealer in Columbia, Mo., has established a taxicab and motor livery business.

A $20,000 brick garage is being erected by P. J. Carusse at 21 Aberdeen avenue, Cambridge, Mass.

Guy Coons has purchased the Greencastle Garage from Cassidy & Browning, Lebanon, Ind.

W. Davis is erecting a 50 x 130-foot garage in Ithaca, N. Y. The estimated cost is $15,000.

J. H. McMahon has secured the agency for Cole cars and Chase trucks in Bisbee, Ariz.

S. R. Koller has entered the garage and repair trade in Kleinfeltersville, Pa.

Fred Woolis and J. H. Warden are erecting a garage in Humeston, La.

George H. Balding, Arco, Ida., has opened a garage and repair-shop.

MOTOR CAR AGENCIES RECENTLY ESTABLISHED

Place	Car	Dealer
Sheville, S. C.	Cole	A. M. Stone
kron, O.	Cole	Summit Auto Co.
Iberta Lea, Minn.	Franklin	Hellie Auto Co.
Bentown, Pa.	Cole	V. H. Steckel
sheville, N. C.	Cole	The Enterprise Machine Co.
tlanta, Ga.	Dodge	The Pegram Motor Car Co.
lankston, La.	Herff-Brooks	Hopewell Planting Co.
loomington, Ind.	Cole	College Avenue Garage
oston, Mass.	Mitchell	Fred. H. Lucas
ridgeton, N. J.	Cole	G. C. Westcott
algary, Alta.	Maxwell	Thos. E. Jackson
algary, Alta.	Haynes	H. T. Sheffield
entralia, Ill.	Cole	Centralia Garage & Vulc. Co.
leveland, O.	Herff-Brooks	Brandt Motor Car Co.
lifton, Ill.	Herff-Brooks	A. N. Grossaint
linton, Ill.	Herff-Brooks	Arthur Shaw
lio, S. C.	Cole	T. G. Covington Auto Co.
arnette, Kan.	Cole	E. W. Weiner
arleston, S. C.	Cole	King Auto & Repair Co.
hicago, Ill.	Herff-Brooks	Chicago Great Western Motor Car Co.
incinnati, O.	Packard	The Citizens Motor Car Co.
olumbus, O.	Cole	The Brasher Motor Co.
olumbus, O.	Premier	Edward Miller
olumbus, O.	Buick	The Oscar Lear Motor Co.
olumbus, O.	Maxwell	The Everitt Auto Sales Co.
olumbia, Mo.	Cole	Columbia Auto Co.
ouncil Bluffs, Ia.	Cole	C. H. Robertson
onnecton, O.	Oldsmobile	W. E. Layman
onnecton, O.	Allen	W. E. Layman
risfield, Md.	Elkhart	Crow Elkhart Motor Co.
rossnora, Pa.	Herff-Brooks	I. A. Reber
ropsey, Ill.	Elkhart	John Popejoy
ayton, O.	Cole	C. W. Hoffritz Sales Co.
eer Plain, Ill.	Cole	R. L. Meyer
uluth, Minn.	Cole	Johnson Motor Car Co.
revel, Mo.	Cole	C. H. Paulk
aston, Pa.	Cole	Lafayette Motor Car Co.
dmonton, Alta.	Baby Rex..Rex	Motors of Canada, Ltd.
dmonton, Alta.	Paige-Detroit	Dominion Motors, Ltd.
lton, Mo.	Cole	Ed. C. Weeks
dora, Ia.	Cole	Emeny Auto Co.
stevan, Sask.	Maxwell	Fredericlson & Green
argo, S. D.	Kissel	Hall Auto Co.
ort Scott, Kan.	Cole	Central Garage
t Wayne, Ind.	Cole	Ft. Wayne Iron Store Co.
ainesville, Fla.	Cole	Gainesville Motor Car Co.
arrett, Kan.	Cole	J. J. Anderson & Son.
anoque, Ont.	Maxwell	W. G. Gibson
ering, Neb.	Franklin	C. C. Hampton
reen Bay, Wis.	Cole	Washington Garage
alls Summit, Kan.	Cole	H. W. McFadden, Jr.
amilton, Ont.	Haynes	Jack C. Elliott
amilton, Ont.	Cole	The Patterson Auto Sales Co.
illsboro, O.	Ford	The Hillsboro Motor Co.
Hillsboro, Ind.	Cole	Byron Heesler
Huntington, Ind.	Cole	John E. Miller
Iola, Kan.	Cole	J. G. Mittelback
Iowa City, Ia.	Cole	H. A. Knease & Sons
Ithaca, N. Y.	Franklin	F. A. McClune
Jerseyville, Ill.	Cole	Wm. Sheppard
Joliet, Ill.	Cole	H. B. Sahles
Kansas City, Mo.	Allen	Jackson Motor Co.
Kansas City, Mo.	R. C. H.	Bruening Bros.
Kansas City, Mo.	Car Nation	Apple Motor Co.
Kansas City, Mo.	Saxon	Bond Motor Co.
Kansas City, Mo.	Briscoe	Bond Motor Co.
Kansas City, Mo.	Chandler	E. C. Eads
Kenton, O.	Giant	W. S. Snyder
Kokomo, Ind.	Cole	C. F. Seaward & Son
Lima, O.	Cole	Thomas Motor Co.
Lima, O.	Studebaker	E. H. Hawisher
Lima, O.	Hudson	Baxter Bros.
Lima, O.	Buick	The Independence Motor Co.
Lima, O.	Maxwell	Wilbur Miller
Lima, O.	Chalmers	W. E. Rudy
Lima, O.	Cole	The Thomas Motor Car Co.
Lima, O.	Ford	Bertran & Friedley
Lima, O.	Partin-Palmer	Shappell Auto Sales Co.
Lima, O.	Lewis	Shappell Auto Sales Co.
Little Falls, N. Y.	Cole	Nellis B. Brenner
London, Ont.	Chandler	The Central Garage
Louisville, Ky.	Dodge	Southern Motors Co.
Louisville, Ky.	Ohio Electric	Electric Garage Co.
Louisville, Ky.	Herff-Brooks	G. F. Munk
Magog, Que.	Maxwell	W. T. Peters
Mankato, Minn.	Cole	Laurie Marx
Manhattan, Kan.	Cole	Hiner & Paige
Marshall, Mo.	Cole	Bloomer Bros.
Martinsville, Ind.	Cole	Martinsville Auto Co.
Marion, O.	Cole	Charles E. Miller
Medicine Hat, Alta.	Franklin	Diehl Motor Car Co.
Miami, Fla.	Herff-Brooks	Belcher Auto Co.
Michigan City, Ind.	Cole	W. J. Grieger
Milwaukee, Wis.	King	The Schreiber-Boorse Motor Car Co.
Minneapolis, Minn.	Elkhart	Alex. R. Curtis
Moose Jaw, Sas.	Maxwell	Henry B. Annabel
Muscatine, Ia.	Cole	Danham & Smalley Motor Co.
Nashville, Tenn.	Buick	Nashville Motor Car Co.
Nashville, Tenn.	Overland	Union Motor Car Co.
Needham, Ind.	Cole	L. M. Megee
New Concord, O.	Elkhart	F. C. Noble
New Orleans, La.	Ford	O. C. Pantall
Niagara Falls, Ont.	Marathon	Crane Bros.
Oakland, Cal.	Maxwell	The Peacock Motor Co.
Oelwein, Ia.	Cole	J. C. Knapp
Omaha, Neb.	Elkhart	Nebr. Crow Elkhart Co.
Ottawa, Ont.	Brockville Atlas	Hull & Ottawa Garage Co.
Ottawa, Kan.	Cole	Troup Brothers
Ottumwa, Ia.	Cole	Johnson Motor Car Co.
Oswego, N. Y.	Herff-Brooks	Ontario Motor Car Co.
Paola, Kan.	Cole	C. C. Hoover
Paris, Ont.	Saxon	A. C. Lee
Peoria, Ill.	Herff-Brooks	Zoller Bros.
Perry, Ia.	Cole	W. J. Cole
Philadelphia, Pa.	Herff-Brooks	Henry Hoopes
Pine Bluff, Ark.	Studebaker	L. B. Bracken & C. H. Montague
Phoenix, Ariz.	Metz	Cole Motor Co.
Poplar Bluff, Mo.	Cole	J. A. Quinn
Princeton, Minn.	Cole	S. P. Skahen
Providence, R. I.	Elkhart	A. O. Poirier
Providence, R. I.	Cole	Cole Motor Sales Co.
Pulaski, Pa.	Cole	John M. Reed
Reading, Pa.	Cole	The Park Auto Sales Co.
Raleigh, N. C.	Elkhart	The Crow Motor Sales Co.
Rochester, Minn.	Cole	West & Poirier
Sabetha, Kan.	Cole	Mishler Bros.
San Antonio, Tex.	Studebaker	Collins-Clem Auto Co.
San Francisco, Cal.	Maxwell	The Pearson Motor Car Co.
Sandusky, O.	Cole	W. C. Waterfield
Sarnia, Ont.	Franklin	Hitchcock & Richardson
Sebring, O.	Cole	Sebring Auto & Repair Co.
Shenandoah, Ia.	Franklin	Franklin Car Co.
Sheboygan, Wis.	Cole	The Struebing Garage
Sioux City, Ia.	Herff-Brooks	Adams Auto Co.
Snyders, Pa.	Herff-Brooks	D. H. Henninger
Spokane, Wash.	Elkhart	The Ward Symington Co.
Springfield, Ill.	Herff-Brooks	Baker & Baker
Springfield, O.	Cole	Ensign Motor Co.
Springfield, Mass.	Winton	August Van der Wolk
Starkville, Miss.	Cole	D. O. Slaughter
St. Joseph, Mo.	Studebaker	The Holliday Motor Car Co.
St. Paul, Minn.	Cole	Martin Motor Car Co.
Strong City, Kan.	Cole	Dr. J. Hinden
Stockdale, O.	Elkhart	O. E. Emery & Co.
Sublette, Ill.	Elkhart	C. J. Streit
Tampa, Fla.	Cole	West Coast Automobile Co.
Topeka, Kan.	Cole	George R. Evans
Toronto, Ont.	Chandler	Brintnell Motors, Ltd.
Toronto, Ont.	Napier	The British-Canadian Import Co.
Tulsa, Okla.	Cole	Chapple Bros.
Utica, N. Y.	Buick	I. R. Gardiner
Versailles, Mo.	Cole	Crewson & Monsees
Victoria, B. C.	Lozier	J. Cameron
Vincennes, Ind.	Cole	W. A. Miller
Williamsburg, Ky.	Ford	Geo. N. Delaney
Winnipeg, Man.	Malcolm	J. H. Weeks
Worcester, Mass.	Franklin	F. B. Williams
Worcester, Mass.	Cole	Thorvald Hanson
Yates City, Kan.	Cole	Stoll Bros.
Yates Center, Kan.	Cole	Stoll Bros.

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Exports Gain—Imports Lose

Good Trade in Year Just Ended—Tires Lose—Parts Increase.

The export of motor cars during the fiscal year ending with June amounted to 29,090 cars, valued at $26,574,574, and represents a gain of 3,804 cars, or 15 per cent, and $561,640, or 2 per cent over the shipments of the 1913 fiscal year. Government calculations place the total of cars and allied products at more than $40,000,000.

Commercial car shipments suffered a loss of 209 cars and $585,530, but pleasure vehicles gained by 4,013 and $1,117,170. Parts shipments increased by $1,383,633. The total of cars and parts increased by $1,945,273. The exports of cars for June alone decreased 82 cars and $200,013.

Seven of the twelve geographic divisions into which export statisticians divide the world made increases in their purchases of American cars. They are, giving car and value gains respectively: France, 605, $298,345; Germany, 586, $280,831; United Kingdom, 3,243, $2,826,232; Other Europe, 1,123, $797,296; West Indies and Bermuda, 118, $64,703; British Oceania, 1,182, $781,144; Other Countries, 552, $407,068. The other divisions lost; export business to South America decreased by 835 cars and $1,225,993.

In 1913 the average value of the pleasure cars exported was $999, and in the year just closed it was $897, a decrease of $102 or 10 per cent. The figures are shown in the accompanying table.

Island Possessions Slow Up.

The exports of cars to the noncontiguous American possessions—Hawaii, Porto Rico, the Philippines and Alaska—decreased during the year ending with June. Cars fell off by 81 cars and $280,842 or 12 per cent.

England Largest Tire Customer.

England was America's largest tire customer during the year ending with June; she bought $1,503,440 worth and gained $377,722 over her purchases in the preceding twelve months. The total tire export trade lost as compared with the year before, shipments being less by $437,853. The leading losers were Belgium, Germany, Mexico and Canada. The details are shown by an accompanying table.

Car Imports Decrease 60 Per Cent.

Imports of foreign-made cars continued to decrease during the year ending with June as they have been decreasing for several years. The total lost by 448 cars, or 60 per cent, and $1,138,887, or 64 per cent. Parts increased materially, more than tripling. The largest supplier was France, with the United Kingdom next.

TIRE EXPORTS.	June		Twelve Months Ending June	
	1913 Value	1914 Value	1913 Value	1914 Value
Belgium	$16,470	.....	$401,900	$15,730
Germany	28,035	6,586	401,196	132,181
England	144,087	192,510	1,125,718	1,503,440
Canada	158,358	168,976	1,324,459	961,937
Mexico	21,603	1,577	203,883	111,948
Philippine Islands	17,597	14,040	100,476	141,205
Other countries	44,975	68,489	385,588	638,826
Total.	$431,125	$453,178	$3,943,220	$3,505,267

	June				Twelve Months Ending June			
	1913		1914		1913		1914	
	Number	Value	Number	Value	Number	Value	Number	Value
ENGINE EXPORTS	53	$9,103	262	$107,409	11,402	$1,728,596	3,843	$1,391,893

CAR IMPORTS.	June				Twelve Months Ending June			
	1913		1914		1913		1914	
	Number	Value	Number	Value	Number	Value	Number	Value
France	20	$45,293	10	$17,365	357	$844,392	134	$304,716
Germany	9	25,642	2	2,293	99	261,168	21	45,680
Italy	4	7,149	5	5,989	116	205,931	55	79,464
United Kingdom	1	2,300	..	.....	78	218,932	40	115,042
Other countries	10	25,132	5	6,099	98	228,957	50	75,591
Total cars	44	$105,516	22	$31,746	748	$1,759,380	300	$620,493
Parts (except tires)	..	11,996	..	96,739	...	263,827	...	812,083
Total cars and parts	..	$117,512	..	$128,485	...	$2,023,207	...	$1,432,576

CAR EXPORTS.	June				Twelve Months Ending June			
	1913		1914		1913		1914	
	Number	Value	Number	Value	Number	Value	Number	Value
France	71	$54,746	143	$88,874	824	$625,795	1,429	$924,130
Germany	157	136,171	44	56,249	849	768,418	1,435	1,059,249
Italy	55	33,098	17	13,801	331	280,961	343	242,695
United Kingdom	386	289,457	240	239,274	3,979	3,026,895	7,222	5,853,127
Other Europe	204	171,783	242	203,816	1,805	1,540,437	2,928	2,337,733
Canada	383	596,681	513	642,024	7,212	9,233,561	4,624	5,919,776
Mexico	5	9,505	3	4,577	270	506,486	167	256,675
West Indies and Bermuda	23	19,315	65	44,657	438	449,421	556	513,124
South America	169	187,185	76	50,683	2,820	3,165,205	1,985	1,939,212
British Oceania	318	332,212	425	369,693	3,062	2,914,451	4,244	3,695,595
Asia and other Oceania	206	207,105	147	149,121	2,231	2,151,392	2,140	2,076,278
Other countries	177	153,894	157	128,370	1,465	1,349,912	2,017	1,756,980
Total cars	2,154	$2,191,152	2,072	$1,991,139	25,286	$26,012,934	29,090	$26,574,574
Commercial	115	167,391	90	120,257	993	1,737,141	784	1,181,611
Passenger	2,039	2,023,761	1,982	1,870,882	24,293	24,275,793	28,306	25,392,963
Parts*		549,616	...	473,968	...	5,240,599	...	6,624,232
Total cars and parts*	...	$2,740,768	...	$2,465,107	...	$31,253,533	...	$33,198,806

DETAILS OF EXPORTS TO THE NON-CONTIGUOUS AMERICAN POSSESSIONS.

Hawaii—Cars	54	$70,413	63	$59,199	718	$1,182,166	701	$841,458
Parts*	...	6,172	...	7,040	...	107,640	...	85,813
Tires	...	22,889	...	33,740	...	346,606	...	357,987
Porto Rico—Cars	16	24,729	19	17,781	323	406,440	291	320,680
Parts*	...	7,114	...	4,456	...	93,813	...	70,025
Tires	...	13,810	...	27,953	...	241,714	...	296,201
Philippines—Cars	94	105,919	42	45,646	560	668,849	652	7621980
Parts*	...	7,195	...	6,605	...	53,434	...	69,933
Tires	...	17,597	...	14,040	...	100,476	...	141,205
Alaska—Cars	8	7,585	14	13,737	16	18,435	54	60,930
Parts*	...	931	...	750	...	3,020	...	7,505
Cars	172	$208,646	138	$136,363	1,617	$2,275,890	1,698	$1,985,048
Parts*	...	21,412	...	18,851	...	257,907	...	233,276
Tires	...	54,296	...	75,733	...	688,796	...	795,393
Total	...	$284,354	...	$230,947	...	$3,222,593	...	$3,013,717

* Does not include engines and tires.

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CASE MAKES SUBSTANTIAL CUTS IN ALL ITS PRICES

"Forty" is $500 Less, "35" $200 and "25" $100—All Prices Subject to 5% Discount for Cash—Few Changes.

Material reductions have been made in the prices of two of the three cars produced by the J. I. Case T. M. Co., Racine, Wis. The Forty will sell for $1,800, instead of $2,300, and the Thirty-five will sell for $1,600, instead of $1,800. The price of the smallest of the trio, the Twenty-five, will be $1,350, instead of $1,250. These prices are subject to a 5 per cent discount for cash and include full equipment, such as extra tire on rim, tire cover, two extra tubes and the regular equipment listed last year. Few alterations have been made in the two larger models, though a number of changes have been made in the smaller one.

New Men in General Motors Truck.

The General Motors Truck Co. has made several additions to its organization; they are: R. G. Hargreaves, formerly with the Cadillac Motor Car Co., transportation engineer; H. T. Sigwalt, advertising manager, formerly with the Fort Wayne Corrugated Paper Co., Fort Wayne, Ind.; Charles Case, Southwestern district sales manager, formerly with the Oliver Motor Co.

Milwaukee Dealers Gained Last Year

(Continued from page 5.)

than 325 cars of the 1915 production.

The Hoppe-Hatter Motor Co., Chalmers, Saxon and Rauch & Lang Electric, reports an increase of 100 per cent in electric vehicle sales and better than 50 per cent in gas cars. Orders booked ahead are much larger than a year ago.

A 50 per cent increase is also reported by the Milwaukee branch of Cole Motor Co., and Manager F. E. Tabbert says this could have been increased if the factory had been able to supply enough cars.

A shortage of Reo cars is reported by the Curtis Automobile Co., which made a 33⅓ per cent increase and was sold out long before August 1.

Frank J. Edwards, manager of the Kissel Kar Co., did a business that was 50 per cent better than the previous year and until 1915 goods arrived booked more orders for future delivery than at any time since the business was established.

The Mitchell Automobile Co., a branch of the Chicago wholesale and retail house, reports only a 25 per cent increase in Mitchell business, but this was due to its inability to get more cars. Detroiter business was increased nearly 200 per cent.

The Schreiber-Boorse Motor Car Co. reports a 50 per cent gain in Locomobile and Hudson business. The company is now handling the National and King.

An increase of 57 per cent in Stutz business and 150 per cent in Overland sales is reported by George W. Browne.

The Milwaukee branch of the J. I. Case T. M. Co. did a 50 per cent better business than during the previous year.

W. W. Burgett, manager of the Stanley Steamer Co., says he sold twice as many 1914 cars as 1913 models. He has recently taken on the Lewis six and has booked orders to cover all of his 1915 allotment.

The McDonald Motor Car Co. reports a 25 per cent increase in Lozier business.

The American Automobile Co., state agent for the Pierce-Arrow, sold just as many cars as a year ago and as it has every year since it took the agency.

Cadillac sales increased 40 per cent, which was the percentage of increase in the 1914 allotment. The Jonas Automobile Co. has increased its 1915 requisition for Cadillacs about the same percentage.

The Chase Motor Truck Service Co. increased its 1914 sales 250 per cent over 1913. Louis Pauly, manager, states that if the cars could have been gotten from the factory the increase would have amounted to not less than 300 or 350 per cent.

There has been no let-up in purchases since August 1 and there is every indication that the prosperity of 1914 will be duplicated during the coming year. The record of 1914 motor car registrations in the State of Wisconsin shows that on December 31, 1913, the registration by private owners was 34,646. On August 1, 1914, the registration had passed the 51,000 mark. Registrations expiring at the close of each calendar year, there are no duplications to swell the total. At the present ratio of gain, Wisconsin will show a total 1914 registration of 20,000 more than 1913, or nearly 55,000.

PROMINENT MEN IN TRADE WHO ASSUME NEW DUTIES

Resignations and Promotions That Serve to Place Many Workers in New Places—Few of Them Leave the Industry.

M. J. Holmes has been appointed sales manager of the Alma Motor Truck Co., Alma, Mich.

C. A. Freeman has become purchasing agent of the J. C. Wilson Body Co., Detroit, Mich.

D. S. Dyer has joined the sales force of the Nordyke & Marmon Co., Indianapolis, Ind. Previously he was connected with the Moon Motor Car Co., St. Louis, Mo.

J. A. Charlton, formerly with the Houston (Tex.) branch of the Ford Motor Co. and later with the Halff Co., has joined the sales force of the Overland Houston Co.

R. P. Henderson has been appointed sales and advertising manager and Henry Nyberg production manager of the Regal Motor Car Co.'s Canadian plant in the same city.

Charles Van Horne, a real veteran of the motor car industry, dating from early bicycle days, has been appointed manager of the commercial department of the Studebaker Corporation, Detroit, Mich.

W. A. Zimmerman has been appointed general sales manager of the Buffalo Electric Vehicle Co., Buffalo, N. Y. Previously he was sales manager of the Mercury Motor Truck Co., Chicago, Ill.

E. A. Scheu, president and general manager of the Euclid Motor Car Co., New York city, has tendered his resignation and severed all connection with the company. His future plans have not been announced.

Riess to Hold Hupmobile Reunion.

Charles E. Riess & Co., New York Hupmobile distributer, will hold what is styled a "grand reunion of all Hupmobile owners" on September 9. Already more than 150 Hupmobile owners have signified their intention of attending. Those who attend will meet at 135th street and Riverside drive about 2:30 in the afternoon and then proceed to Coney Island, where dinner is to be served at Reisenweber's. After dinner there will be a dancing contest, the prize being a silver Hupmobile cup. It is expected that factory representatives of the Hupmobile company will be present.

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Advanced Maintenance

REPAIRING DAMAGED FENDER IRONS

(Continued from last week.)

By George Fernwell

With the chassis stripped of the body the work of determining when the runningboards or their brackets are parallel to a line extending across and touching the upper faces of both sides of the frame becomes very much simplified. Fig. 8 illustrates this clearly. A straight edge applied as shown may be considered to be in general a more accurate base from which to determine the parallelism of the runningboard than can usually be had by using the floor of the work-shop as a base of measurement.

In the event of the runningboard having to be removed, should the cross section of the portion of the bracket immediately under the runningboard be of a deep channel or U cross section, a socket wrench will be necessary to a quick removal of the nuts of the step bolts.

As the nuts will probably be badly rusted, they may resist being unscrewed to a degree which may cause the square portion of the bolt stem close up to the head to turn in the wood, destroying the grip of the latter on the bolt. If new bolts can be obtained to replace the old ones the simplest course would be then to cut the nuts off with a chisel.

If new bolts are not available some means must be devised of holding the bolts while unscrewing the rusted nuts. This is an instance where the time wasted in attempting to hold the almost inaccessible bolt head by means of wedging a screwdriver or other tools under the head can be put to more certainly effective use by drilling about a 3/16-inch hole as near the thin edge to the bolt head as possible and then driving in a small wood screw. Figs. 6 and 7. By this simple means the bolt head may be securely held against turning with a minimum loss of time.

Incidentally the nuts once removed should be replaced on the bolts to which they belong. The reason for this apparently unnecessary caution is that some makes of both fender bolts and step bolts have a square thread instead of having a sharp V-thread. Fig. 10. Therefore, the 3/16- or ¼-inch square nut of the ordinary machine or carriage bolt will not fit corresponding size and thread pitch of fender or step bolt having the square thread referred to above.

To proceed with the description of the work of straightening or readjusting bent runningboard brackets, undoubtedly the more thorough work can be produced with the use of bending irons. In most cases an assistant is needed. Fig. 9

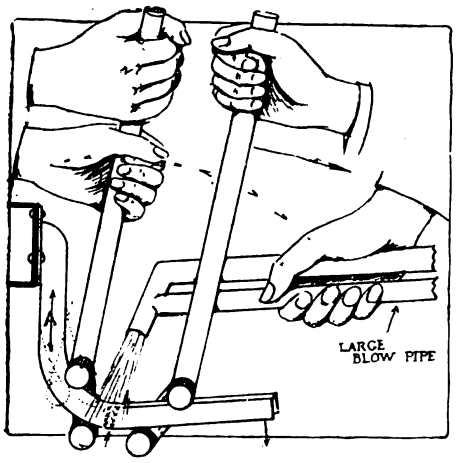


Fig. 5—A badly bent fender iron may require heating with a large blow-pipe before it can be forced into shape by the workman and his assistant. The torch is applied before the tools are used

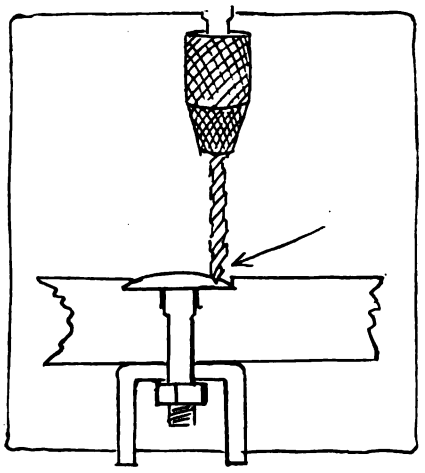


Fig. 6—A bolt that turns in the wood may be held in position by drilling a 3-16 hole through the head close to its edge and driving in a wood screw. This saves much time in removing a rusted nut

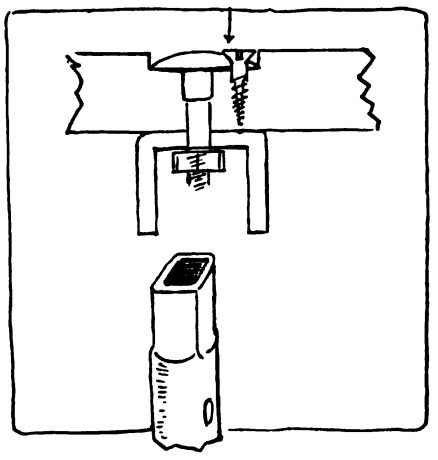


Fig. 7—With the wood screw holding the bolt securely against turning, a wrench may be applied and the nut removed with little difficulty. Should this fail, the only alternative is to split the nut

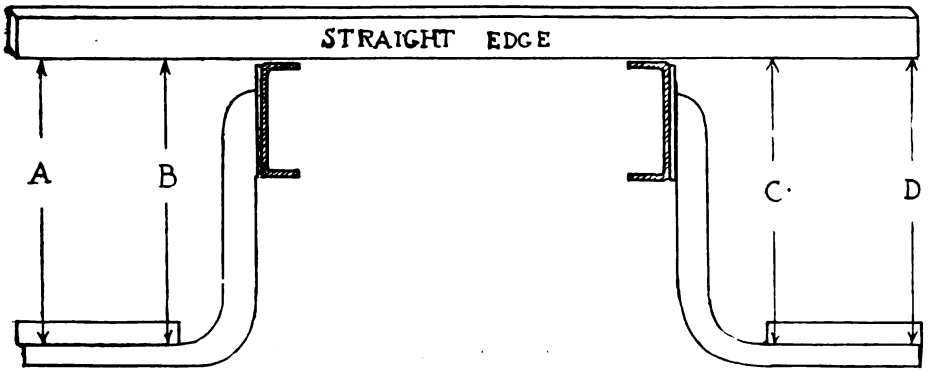


Fig. 8—With the body of the car removed from the chassis it is a simple matter to find out if the running boards are parallel with the top of the frame. A straight-edge is laid across the frame and accurate measurements taken at the points A, B, C and D, all of which should be alike

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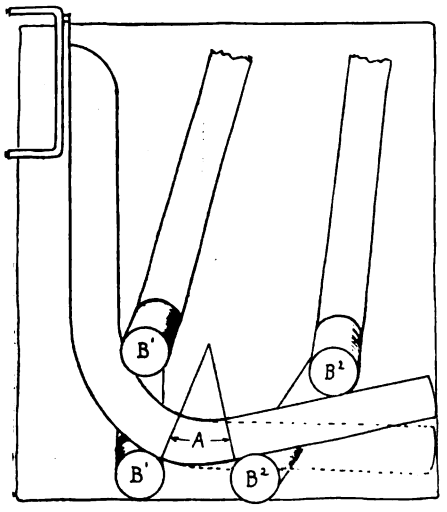


Fig. 9—In straightening a fender iron the assistant holds his tool as at B1, counteracting the tendency of the leading man's tool, B2, to bend the iron above the point indicated at A

illustrates the workman and his helper readjusting a bent runningboard bracket similarly deformed to the one described as being straightened with the aid of two jacks and a piece of lumber.

The assistant in the repair illustrated is required to hold his bending iron in such a manner that he will not risk a further deformation or bending out of shape of the bracket, holding the bending iron perfectly rigid.

At the same time that force is applied or resistance offered with the bending irons in the direction indicated by the arrows, the bending irons must be firmly gripped to insure that they do not twist and slip from their place.

While Fig. 5 illustrates a blow-pipe being used to heat the deformed portion of the brackets, the bending irons would not necessarily be applied at the same time as the blow-pipe or until sufficient heat had been applied to facilitate the bending process or straightening.

The straightening operation shown in Fig. 5 can be performed without the aid of a blow-pipe, although not quite as accurately. Without the application of heat, it, however, requires in some cases considerable muscular effort first on the part of the assistant to prevent the bracket being bent in the wrong place and on the part of the workman to allow him to locate the fulcrum pins of the bending irons as close together as may be desirable.

Before applying the flame of a blow pipe for the purpose of heating the deformed bracket certain common sense precautions must be taken. Of course the runningboard and splash guard must be removed. Also, assuming that the body is not removed from the chassis, particular care must be taken to keep the flame away from the paint of the body. Further precaution is obviously necessary, when using a naked gas flame around the chassis, to see that there may be no waste or leakage of gasolene or gasolene vapor. The gasolene pipe and tank should be empty.

The quickest and most effective means of imparting heat to the deformed portion of the running board bracket is an acetylene torch very judiciously applied. The acetylene torch is especially effective when it is desired to make the bracket red hot at one point with the shortest possible length of bracket made red hot.

The larger sizes of ordinary brazing blow pipes may be used very effectively,

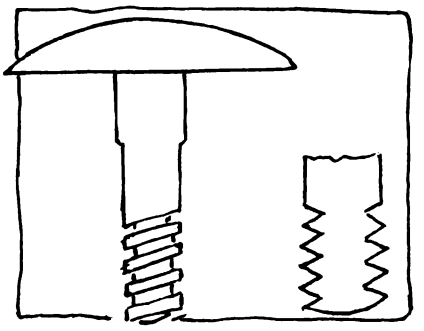


Fig. 10—A nut with a square thread will not go on a bolt with a V-thread, and vice versa, though both may be of the same nominal size. Therefore care should be taken to put nuts back on the bolts they came from

when the air blast is furnished by a pressure tank or blower.

Should a gasolene torch or a medium or small size brazing blow pipe be available the somewhat insufficient heat to be obtained by the use of any one of these may be supplemented with additional heat by arranging small pieces of charcoal around the portion of the bracket to be heated. The charcoal may be held in place around the work by arranging three common bricks or fire bricks in the form of a trough and supporting the latter by any available means so as to hold the charcoal close to the work and yet not interfere with the free use of the bending iron; or the charcoal may be held in place in a roughly made cage or basket formed of wire netting or thin sheet iron. (Fig. 11.)

Incidentally it may be remarked that the charcoal once being ignited but not completely consumed during the process of the work, should be removed from the neighborhood of the chassis and completely smothered with water. Even after the blow pipe flame has been extinguished, charcoal will burn into a bright fire and give off dangerous sparks.

Good judgment must be exercised in order to determine the location of the one or more points at which the deformed forging actually commences to deviate from the normal outline. Further exercise of careful judgment is required to determine at least approximately the length of the section which is deformed.

Fig. 9 illustrates a bend which has been deformed from its normal contour at a very short segment of the curve. To restore this forging to its original outline, the more closely the re-bending or straightening process can be confined to the limits of the short segment, the more closely the bracket can be made to reassume its original outline.

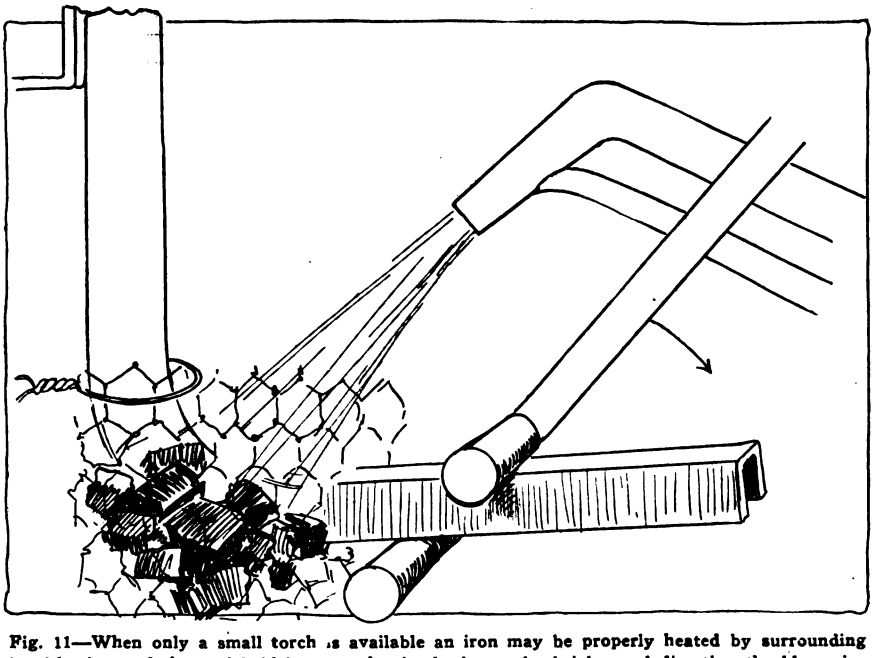


Fig. 11—When only a small torch is available an iron may be properly heated by surrounding it with pieces of charcoal held in a rough wire basket or by bricks, and directing the blow pipe flame on both iron and charcoal. The coals should be carefully quenched after the work is finished

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The Week's Incorporations

Frankiln, Ind.—Parr Auto Shoe Co.; capital $10,000; motor car supplies. Corporators—W. A. Parr, G. E. Parr and William Featherngill.

Gary, Ind.—Fifth Avenue Garage; capital $5,000; general garage business. Corporators—William Sykes, Ralph Sykes and Carlisle Dorman.

Portland, Ore.—Interurban Autocar Co.; capital $10,000; to conduct a passenger and freight line. Corporators—W. E., Henry M. and Helen M. Williamson.

Indianapolis, Ind.—St. Clair Taxicab Co.; capital $2,000; to conduct a motor vehicle business. Corporators—B. G. Schwankhaus, Roger Kinney and C. B. Miles.

Detroit, Mich.—Stoepel Co.; capital $1,000; to deal in motor cars and supplies. Corporators—H. Robert Stoepel, David M. Whitney and Nathan T. Viger.

Detroit, Mich.—McKenney-Devlin Co.; capital $10,000; to manufacture and sell motor cars. Corporators—George A. and Lyle A. Devlin and Paul R. McKenney.

Harrisburg, Pa.—Cummins Motor Car Co.; capital $25,000; to deal in motor cars and operate garages. Corporators—O. O. Cummins, T. Y. Gregg and H. R. Walker.

Chicago, Ill.—Eagle Cycle Car Co., under Massachusetts laws; capital $250,000; to manufacture motor cars. Corporators—J. Parker, U. B. Curtis and E. G. Lancaster.

Indianapolis, Ind.—Garage Owners' Association of Indiana; to improve conditions relating to public garages. Corporators—W. N. Mitchell, A. L. Mitchell and George Pfieger.

Wilmington, Del.—Postles Automobile Brokerage Co.; capital $50,000; to transact a motor car brokerage business. Corporators—G. P. Postles, L. A. Bradley and S. D. Townsend, Jr.

Chicago, Ill.—Modern Auto Parts Co.; capital $20,000; to manufacture motor cars, parts, gasolene engines and parts thereof. Corporators—E. S. Carr, W. R. Fetzer and E. A. Biggs.

Springfield, Mass.—Hendee Mfg. Sales Co.; capital $50,000; to sell motorcycles, motor cars, aeroplanes, etc. Corporators—G. M. Hendee, Suffield, Conn.; F. J. Weschler, Springfield.

Clifton, N. J.—Lubricating Accessories Co.; capital $25,000; to manufacture motor cars and lubricating specialties. Corporators—J. Swanson, R. W. Haubner and P. A. Ott, all of Clifton.

Paterson, N. J.—New Jersey Motorbus Co.; capital $50,000; to operate motor busses, hacks, cabs, etc. Corporators—L. Cramer, Sr., L. Cramer, Jr., and J. J. Purce, all of Paterson.

Elyria, O.—I. T. S. Rubber Co.; capital $100,000; to manufacture all kinds of rubber goods. Corporators—J. G. Tirrford, A. G. Smith, C. H. Ingwer, William C. Smith and C. H. Lewis.

Cleveland, O.—Automatic Lifting Jack Co.; capital $50,000; to manufacture motor car supplies. Corporators—T. H. Wittliff, C. W. Parker, C. M. Deadwyler, F. M. Wittliff and J. A. Wortman.

Cleveland, O.—Ot-to No Air Tire Co.; capital $100,000; general rubber manufacturers. Corporators—Frederick V. Roesel, Wallace B. Ott, George M. Ott, George N. Gilmore and Charles H. Frank.

Jamestown, N. Y.—Gabrielson Car Parts Mfg. Co.; capital $35,000; to manufacture motor car parts, etc. Corporators—John Gabrielson, Gustaf A. Lawson and Oscar A. Lenna, all of Jamestown.

Massillon, O.—Wagner Auto Garage Co.; capital $10,000; to deal in motor cars and operate a garage. Corporators—C. W. Wagner, F. M. Lore, G. A. Siebaneller, C. A. Wendling and C. M. James.

Wilmington, Del.—Dart Motor Truck Co.; capital $600,000; manufacture and sale of motor trucks. Corporators—C. W. Hellen and W. Galloway, both of Waterloo, Ia.; C. C. Wolf, Parkersburg, Ia.

Long Island City, N. Y.—Astoria Auto Trucking Co.; capital $3,000. Corporators—Philip Sillman, 192 Purdy street; Christopher Straub, East Elmhurst, L. I.; E. W. Ryder, 104 Taylor street, Brooklyn.

Chicago, Ill.—Chicago Wheel Co.; capital $2,500; to manufacture and deal in repairing wheels, tires and bodies for vehicles of all kinds. Corporators—E. C. Seaton, John J. Gleason and Walter Treloar.

Syracuse, N. Y.—Reo Sales Co.; capital $15,000; general motor car business. Corporators—George E. Norris, 136½ Furman street; Harold N. DeWitt, Camden, N. Y.; Charles H. Norris, 28 James street.

Rochester, N. Y.—J. Lawrence Hill Co.; capital $10,000; general motor car business. Corporators—J. Lawrence Hill, 40 Warwick avenue; James Jaffray, 45 Richard street; Joshua C. Harris, 327 Webster avenue.

Pittsburgh, Pa.—Motor Square Auto Dealers' Co.; capital $5,000; to deal in motor cars. Corporators—William H. La Fountain, Frank P. Blackmore, Lovell M. Johnson, C. P. Galanot and Frank Nicol, all of Pittsburgh.

New York, N. Y.—Saxon Motor Co. of New York; capital $1,000. Corporators—Harry W. Ward, 1305 Bellevue avenue; Lincoln R. Scafe, 173 Clairmont avenue; Laurence Moore, 437 Jefferson avenue, all of Detroit, Mich.

Yonkers, N. Y.—Frank X. Smith; capital $1,000; to manufacture and deal in tires and rubber goods. Corporators—Frank X. Smith, 312 New Main street; C. W. Reynolds, 188 Wadsworth avenue, New York city; Thomas F. MacMahon, 1400 Broadway, New York city.

New York, N. Y.—Accident-Proof Tire Co.; capital $250,000; to manufacture and deal in tire filler and other motor car accessories. Corporators—Kerr F. Albertson, 54 Morningside drive; James O. Hodge, 878 East 23rd street; Carl W. Stuart, Oriental hotel, all of Brooklyn.

Recent Losses by Fire.

Gridley, Cal.—City Garage; loss $12,500.

Akron, O.—John W. Warren; garage; loss not stated.

Barrie, Ont.—DeHart & McLean; garage; loss not stated.

Appleton, Wis.—Killen-Strait Mfg. Co.; plant damaged; loss $2,500.

Milwaukee, Wis.—Emergency Garage; five cars and building destroyed; loss $10,000.

Chicago, Ill.—Acme Garage; building damaged and two cars destroyed; loss $5,000.

Clinton, Ind.—Murray Garage; building, equipment and 15 cars burned; loss $15,000.

Grand Rapids, Mich.—Central Auto Co.; building, cars and material damaged; loss $6,000.

Grand Rapids, Mich.—Grand Rapids Taxicab Co.; five cars and eleven hacks destroyed and building damaged; loss $6,000.

Coming Events

* Indicates sanction by A. A. A.

Aug. 29, Galesburg, Ill.—Track meet under the auspices of J. A. Sloan.*

Sept. 2-3-4, Milwaukee, Wis.—Economy Reliability run.

Sept. 4, Des Moines, Ia.—Track meet, Iowa State Board of Agriculture.*

Sept. 2-7, Hartford, Conn.—Automobile show, Connecticut Fair Association.

Sept. 5 or 6, Pittsburgh, Pa.—Track meet under auspices of E. A. Moross.

Sept. 6-7, Detroit, Mich.—Track meet under auspices of J. A. Sloan.*

Sept. 6, 7, 8, Newark, N. J.—Cyclecar Reliability Tour to Atlantic City.

Sept. 7, Brighton Beach, N. Y.—Track meet, New York Motor Dealers' Contest Association.

Sept. 7, Corona, Cal.—Road race, Corona Auto Association.

Sept. 7, Providence, R. I.—Track Racemeet under the auspices of F. E. Perkins.

Sept. 7-14, Indianapolis, Ind.—Automobile show, Indianapolis Automobile Trade Association.

Sept. 9-11, Cleveland, O.—Convention Paving Brick Manufacturers' Association.

Sept. 10-15, Portsmouth, Eng.—Autumn Conference, Institute of Metals.

Sept. 11-12, Peoria, Ill.—Track meet National Implement & Vehicle Show.

Sept. 12, Hamline, Minn.—Minnesota State Agricultural Society's track racemeet.*

Sept. 14, Milwaukee, Wis.—Track racemeet under the auspices of the State Board of Agriculture.

Sept. 15-16, Norfolk, Neb.—Track racemeet under auspices of N. A. Huss.

Sept. 15-Oct. 11, New York City—Commercial Tercentenary Celebration.

Sept. 18-19, Hutchinson, Kan.—Kansas City State Fair track racemeet.

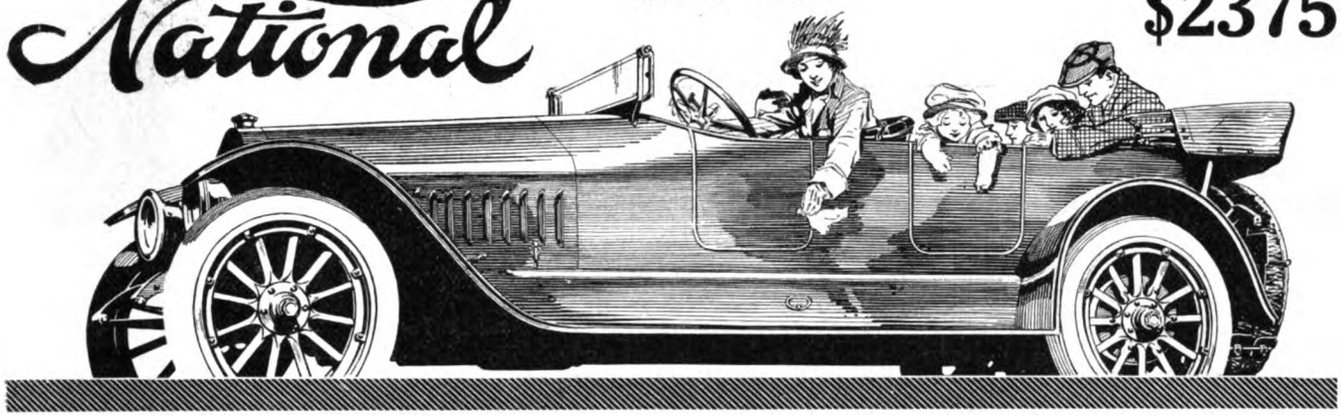
Sept. 18 and 26, Springfield, Ill.—Illinois State Fair Association's track racemeets.

Sept. 26, Memphis, Tenn.—Track meet Tri-State Fair.

Sept. 26, Kalamazoo, Mich.—100-mile track meet Inter-State Fair.*

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National Series "AA" $2375



The National's Fifteenth Year of Success

¶ **Last year many dealers said,** "If we had only known what the **National** had up its sleeve, we would have waited." This year, however, if you regret that you are not a **National** dealer later in the season, you can't blame us.

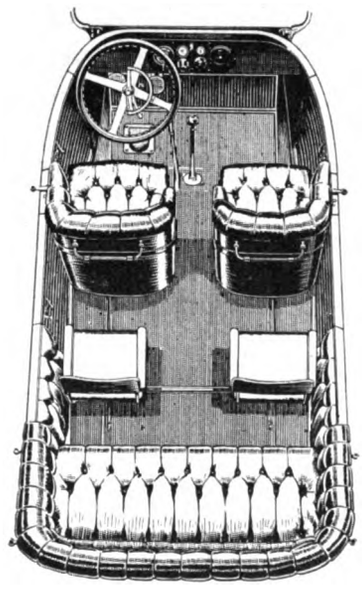
¶ **This year is destined to see** several things happen in the automobile business. The sound reputation that the **National** has been building steadily for the past fourteen successful years is going to serve dealers better this year than ever before. This **National** confidence and prestige is a good banner to get under right now. Bear in mind, that the **National** has not been an "up and down" proposition, but a consistent winner. The **National** has no bad reputation to "live down." It has a clean, convincing record for quality cars of dependable performance. In fact, the season just closed has been the **National's** best. Do you suppose the buying public is ignorant of this? Don't you realize that with the **National** you are not handicapped, but rather, are put on the vantage ground?

¶ **The new National "Aisle-way"** is the last word in style design. It accommodates six passengers, each in a comfortable, convenient seat. The extra seats are easily folded entirely out of the way and completely covered. A passageway between the front seats allows all passengers to easily change seats, also makes front seats veritable armchairs.

¶ **The easiest thing we have** to prove is that this new **National** is an excellent mechanical device. It is also without a superior in style, comfort and convenience.

Six cylinder motor, giving more than sixty horse power and better than fifteen miles per gallon. 132 inch wheelbase. Tires 36x4½

Cantilever Springs--Electric Starter and Lights—Fully equipped. National Sixes made in four types, 2, 4, 5 or 6 passenger bodies.



Six Passenger with "Aisle-way" Front seats and disappearing armchairs.

National Motor Vehicle Co., Indianapolis, Ind.

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Cadillac
Standard of the World



This date will mark the dividing line between motoring as it has been known and motoring as the futur will know it.

The climax in motor car progress
The utmost in motor car efficiency
The maximum in motor car service
The extreme in motor car luxury
The practical things and the things worth while.

For these and for all of the elements which contribute in the highest degree to the charms of motoring, the public has learned to look each year to the Cadillac.

Cadillac ideals, Cadillac engineering genius, Cadillac resources and Cadillac methods, are reinforced by the experience gleaned in the successful production of more than eighty thousand cars—the greatest number of the high grade type produced by any one maker in the industry.

The public, guided by a recognition of the Cadillac policy to avoid exaggeration and overdrawn statements and guided by its policy to under-claim rather than to over-claim, has always felt secure in accepting Cadillac representations at their full worth.

Therefore, when the Cadillac Company says that it is about to offer a motor car which marks developments and advancements so great, so vast, so widespread in their scope, that past achievements pale almost into insignificance, you are justified in looking forward to something which even the word "extraordinary" fails adequately to describe.

New pleasures and new comforts are in store.

Luxuries of which you may have dreamed but for which you had hardly dared hope, are to become a reality.

Motoring will possess new charms. The word will have a new meaning and a new significance.

You may draw a mental picture of your ideal car—of what it should be capable of accomplishing, of how it should perform.

You may place your expectations as high as you please.

We do not believe you will be disappointed.

Our formal announcement will be a revelation.

It will mark the dividing line between motoring as it has been known and motoring as the future will know it.

Cadillac Motor Car Co. Detroit, Mich.

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EVEN A CHINAMAN

Could Imitate The Outside of an

LBA

TRADE MARK REGISTERED

STORAGE BATTERY



But imitation is not duplication and the external appearance of a Battery is no indication of its internal quality.

It requires more than surface imitation for the imitator to duplicate the original.

THE WILLARD LBA BATTERY

Has Been Imitated But Never Duplicated

THE WILLARD LBA BATTERY

In some cases the appearance of the LBA has been so copied that the layman could not distinguish between it and the counterfeit until he found the trade-mark.

So if you want real battery service, real quality and genuine satisfaction, look for the LBA name-plate on the battery you buy or that is furnished with your new car

WILLARD STORAGE BATTERY CO.

Cleveland, Ohio

New York Branch: 228-230 West 58th St.
Chicago Branch: 2241 Michigan Ave.
Detroit Branch: 736-740 Woodward Ave.
San Francisco Branch: 821 Monadnock Bldg.
Indianapolis Branch: 318 North Illinois Ave.

SERVICE STATIONS IN ALL PRINCIPAL CITIES IN THE UNITED STATES, CANADA AND MEXICO

(113)

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Studebaker

STUDEBAKER SALES—THE PROOF OF NATIONAL PROSPERITY

On the day this advertisement is being written —Friday, August 21st—

The Studebaker Corporation is 2,508 cars behind orders for immediate delivery—and yet—160 Studebakers are being shipped every day.

In the first two weeks in August, dealers and sub-dealers came to Studebaker distributing points—

And drove away 1,128 Studebaker cars.

On account of congestion of orders, we are now compelled to refuse further train-load shipment to branches and to large dealers.

Every mail—every click of the telegraph piles up Studebaker orders—and records popular approval of Studebaker cars—and popular confidence in the permanency of national prosperity.

And this is August—usually the laggard month in motor car sales.

For four months the American people have had the prophecy and promise of stupendous crops.

Today—and for a year or years perhaps—the United States must feed Europe. Providentially we have been allowed to rise to this tremendous emergency. Nature has never been more lavish to this country.

And it is entirely logical that the Studebaker Corporation—with sixty-two years of good name and good manufacture and good will behind it—should be, among the great representative institutions of the country, the first to feel the impetus of national prosperity and national confidence restored.

This unquestionably will be the biggest year the Studebaker Corporation has ever known.

The prices of the new Studebaker cars—$985 for the five-passenger "Four" and $1,385 for the "Six"—have met with popular response even more enthusiastic than we had anticipated.

But such remarkable Studebaker sales as these, such proof of national optimism and prosperity must be interpreted as of even greater significance.

This demonstration—country-wide—means more than confirmation of Studebaker hopes, policies, plans and ideals.

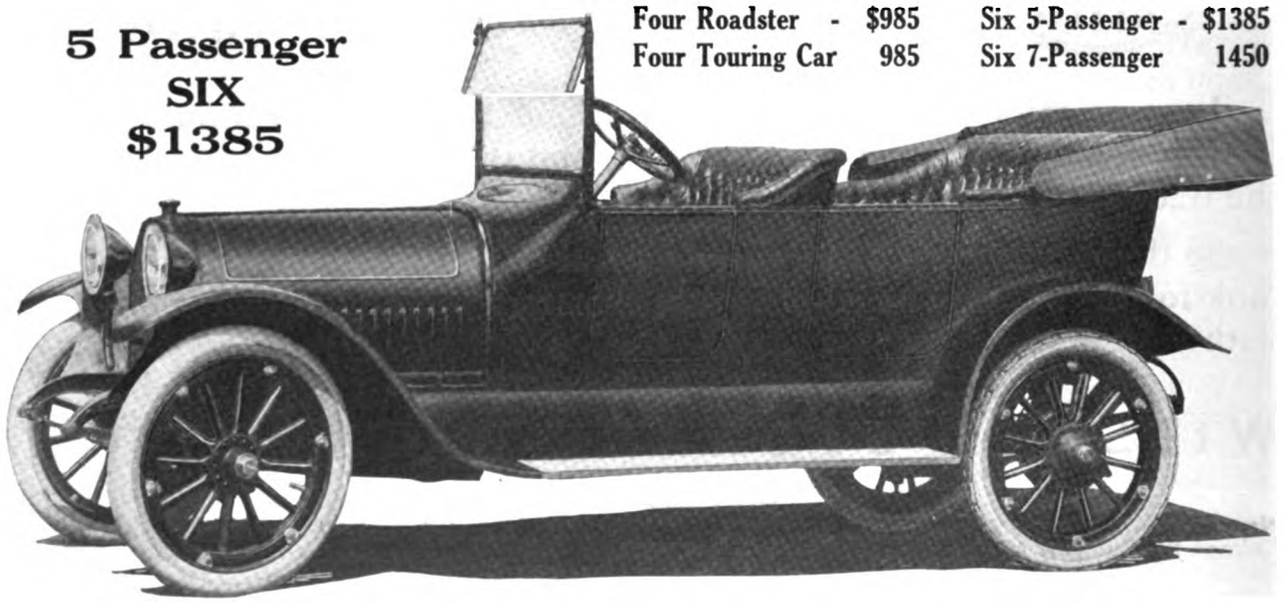
It means that big crops have turned the tide; that all we American people are today blessed with an abundance and an opportunity such as no world's people before has ever had.

And it is very good these days to be an American.

STUDEBAKER - DETROIT

5 Passenger
SIX
$1385

Four Roadster - $985
Four Touring Car 985
Six 5-Passenger - $1385
Six 7-Passenger 1450



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Maxwell Motor Company
Makes Statement of Facts With Reference to Racing Cars

ON JUNE 1st an advertisement appeared in various papers throughout the United States relative to the races on the Indianapolis Speedway. This telegram was sent out by a representative of this company who did not make it clear that the car referred to was a Maxwell Racer No. "25" and not a Maxwell Model "25" stock car. There was no intention on our part to mislead anyone into believing that the car that made such a wonderful showing in the Indianapolis race was a Maxwell "25" stock car.

¶We expect to continue racing, and fully appreciate the work that is being done by the Contest Board of the American Automobile Association.

¶Since the Indianapolis races one of the Maxwell Racing Cars won the Potlatch Trophy at Tacoma on July 3d, defeating 13 other cars and making an average speed of over 74 miles per hour, and we were careful to see that no one could be misled in the publicity used about the Tacoma victory.

¶We have no desire to be misunderstood in the matter, and make this statement for the purpose of setting ourselves right before the public.

WALTER E. FLANDERS, President
Maxwell Motor Company, Inc.

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MAYO RADIATORS



EVENTS have proven that more courage and ability are required to imitate Mayo quality than to copy Mayo design. Quality is the basis on which Mayo Radiators have been built and will continue to be built.

MAYO RADIATOR COMPANY

New Haven, Connecticut

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This is the Package and the World Trade Mark to look for

In the show windows and on the shelves of 35,000 dealers throughout the United States you will find this well known package. It contains the famous CHAMPION SPARK PLUG which is recognized everywhere in motordom as the greatest and most efficient spark plug manufactured.

More than 75 per cent. of all the motor cars made this year are being equipped at **the factory with CHAMPION SPARK PLUGS.**

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- ✔ INSPECTION—Gauging shells for thread diameter
- ✔ INSPECTION—Checking shells for gasket seats
- ✔ INSPECTION—Gauging threads of bushings
- ✔ INSPECTION—Checking gasket seats of bushings
- ✔ INSPECTION—Passing bare porcelains through limit gauges
- ✔ INSPECTION—Testing strength of electric welds of center wires
- ✔ INSPECTION—Testing the assembled porcelains
- ✔ INSPECTION—Copper and asbestos packing washers
- ✔ INSPECTION—Compression tightness of assembled plugs
- ✔ INSPECTION—Rejection of all plugs with crooked porcelains
- ✔ INSPECTION—Point setting
- ✔ INSPECTION—Finish and workmanship
- ✔ INSPECTION—General—of the plugs by chief inspector
- ✔ INSPECTION—Final—of finished packages before shipping

No Imperfect Parts Get Into Champion Spark Plugs

In the production of CHAMPION SPARK PLUGS the division of labor is carried to a point of the very highest efficiency. Every workman has but a single operation to perform, a single operation in which he is highly skilled. Rigid inspection of each of these operations maintains the very highest standard of workmanship. The most accurate gauges are supplied for every part so the inspectors may detect the slightest defect.

Fourteen separate and distinct inspections must be passed before a single spark plug goes out of our hands. Surely when every part is thus carefully gone over, and after each assembly operation is rechecked—the finished plug leaving our factory, carrying with it to the motor public our manufacturing reputation, must be in every detail a perfect spark plug. The finest automatic machinery procurable, a large daylight factory of the most modern design, a manufacturing organization of exclusive spark plug experience and a system of distribution unsurpassed by any accessory concern in the automobile industry give to the buyers of CHAMPION SPARK PLUGS the assurance that they are getting "the one best buy" in the whole field of spark plugs.



Our
Parts Inspection
Department

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OUR USE OF NOTHING BUT THE BEST MATERIALS MADE, THE PERFECTION OF OUR MANUFACTURING PROCESS AND THE COMPLETENESS OF OUR INSPECTION, INSURE US IN THIS OUR BROADEST OF ALL KNOWN GUARANTEES.

Our guarantee is simply this—if you are dissatisfied with the plug for any reason whatever, we will replace it. It must give complete satisfaction **to you.**

We rely upon the reasonableness of human nature. We know the plugs are as perfectly made as human hand and brain can make them. This knowledge enables us to offer to replace wherever there is any doubt.

We have backed up this same guarantee for several years and we know what we are talking about. It takes a lot of confidence to put that kind of guarantee behind any product.

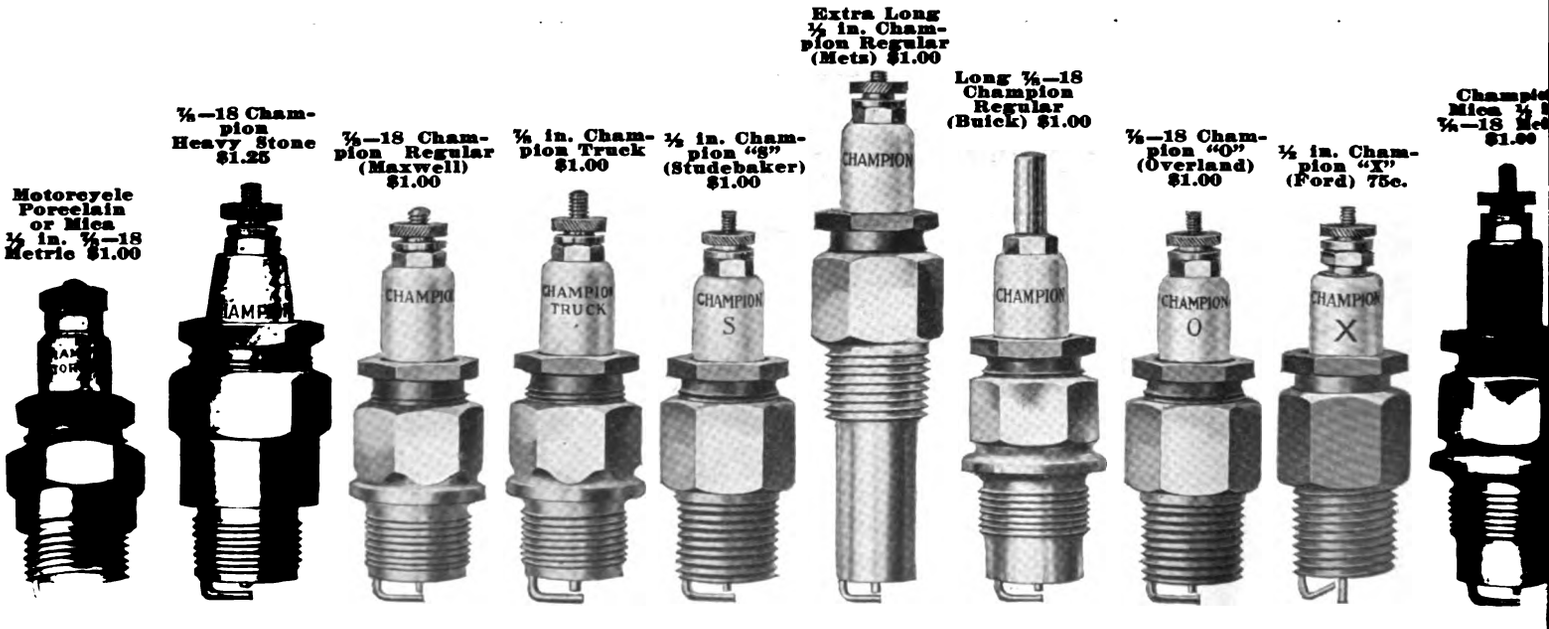
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WE INSURE DEALERS WHO MARKET OUR PRODUCT

There is no chance of you, Mr. Dealer, going wrong in carrying a complete line of our Champion Plugs. We can furnish you with **any type** plug, taking care of your spark plug business in every detail. Our offer is such that you will find it well worth while to have no other plugs in stock but Champion plugs. Those who handle our product are insured against loss in this manner. We willingly replace one type for another. If you have any particular type plug in stock that is not moving, all you have to do is notify us. It is our aim to furnish our customers with type plugs which are being used to greatest advantage. No benefit is derived by us in goods remaining long in stock. We want them on the car. Why fill your shelves with an assortment of freakish designed plugs when you may have our standard makes which are always worth to you, in money, just what you have paid for them. There are no arguments in facts.

Our offer, which is most liberal, in addition to our many ways of helping, makes the handling of our goods an absolutely safe proposition. Under these conditions you can afford to carry the most complete line. In doing so there is no possibility of loss, and you are always in a position to furnish your customer with just what he requires, and that satisfaction of his is far reaching and does not stop at that one purchase.

We look after our goods while they are being used with the same care which is given in the manufacture. After your customer buys, we take care of him. Our guarantee looks after your customer in every particular. We strive for endless satisfaction.



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Ralph De Palma—Mercedes—Waltham;
Driver, car, and clock make thrilling records!

The Waltham Automobile Clock, fitted to the victorious Mercedes which De Palma drove at Elgin, maintained its unerring accuracy through the terrific strain.

After each race the Waltham was checked with a chronometer and found to be keeping perfect time.

No other automobile clock ever equalled this amazing performance of enduring accuracy under gruelling conditions.

Like the winning driver and the winning car in these two thrilling races, the winning Waltham established a record for strength and dependability which makes its supremacy beyond question.

In the Chicago Automobile Club Trophy Race the Waltham traveled in the Mercedes at an average speed of 73.6 miles per hour.

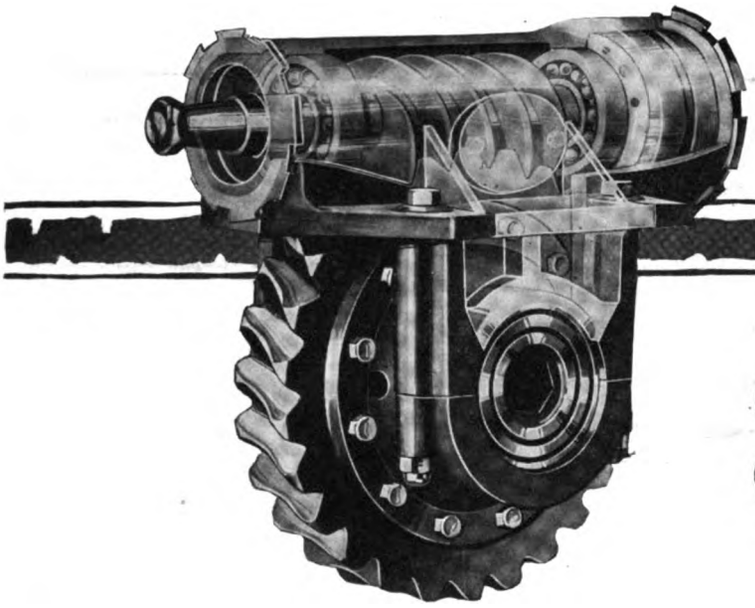
In the Elgin National Trophy Race the Waltham was hurtled along over the course at an average speed of 73.5 miles per hour.

In each race the Waltham traversed three hundred and one miles of an extremely rough course. It would be difficult to imagine a more searching test of the strength and accuracy of an automobile accessory.

The Waltham is the *only* scientific and dependable automobile clock!

Waltham Watch Company, Waltham, Mass.

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SHEL

SIMPLY in keeping with our determination to take both industry and buying public into our absolute confidence, both as to our manufacturing and selling policies, we made an announcement a few weeks ago concerning the question of protecting car and truck buyers from being imposed upon by over-rating of the carrying capacity of trucks using Sheldon equipment.

SPRINGS

Much to our surprise this statement brought forth a considerable amount of favorable comment from both customers and trade—comment that indicates an absolute need on the part of manufacturers of protecting the buying public against this practice of over-rating. In other words, it would appear that there have been a great many sufferers from the sale of trucks in which the carrying capacity rating was in excess of the capacity for which the axle was built.

Because of the interest that this matter created we feel justified in repeating again the substance of our previous advertisement which provoked this comment.

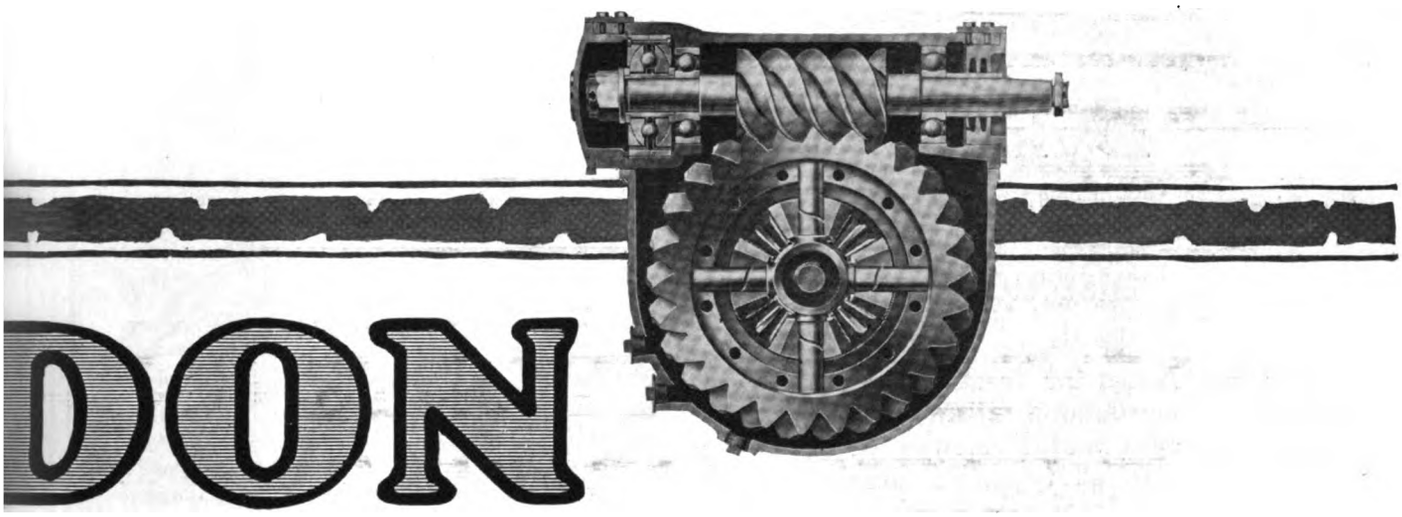
Sheldon Truck Parts are sold only to manufacturers who will agree to use them on trucks with a carrying capacity for which such trucks are designed.

In the production of any part the parts-manufacturer figures a factor of safety which will take care of occasional extreme stresses and strains due to exceptionally hard driving and the occasional over-loading of the completed unit in the hands of the consumer. This factor of safety is necessary for the economical operation of the finished product by the consumer. But because of severe competition and narrow-sightedness of some manufacturers various parts built as equipment of certain capacity trucks have been placed in trucks that were ultimately sold as of far greater capacity than the parts originally were designed to accommodate.

SHELDON AXLE CO.,

Makers of Springs and Axles for Heavy Duty Service for more than 50 years

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The dealer in turn in offering this truck to the consumer has felt that if it were rated at three tons it could carry four, so that when the truck actually became operative all of the factors of safety were being taxed to the limit every minute to make good. Result —that when the exceptional did occur there was no factor of safety left to take care of it—there was a broken truck and a disappointed user.

The Sheldon Axle Company simply insists that the factor of safety which it builds into every single product which leaves its factory shall be delivered to the consumer for his protection. For that reason we insist that every manufacturer who uses Sheldon Products shall sign a contract, part of which is the following clause:

> **"The buyer agrees to use the material called for in this order on trucks with a carrying capacity as given herein. Any departure from this agreement relieves the seller of all responsibility for breakage and the seller may at his option discontinue furnishing additional equipment for such trucks."**

There is nothing revolutionary in this policy at all. It is just good, plain business common sense, and it is in keeping with the general policy throughout the manufacturing and selling end of the Sheldon Axle Company—namely, to give the maximum of service to the ultimate consumer in every conceivable manner.

This selling policy is along the same lines as our designing and manufacturing policy, as evidenced in the construction particularly of the Sheldon Worm Gear Axle. Here is a product in the design of which the best engineering brains of this continent and the other have been allowed to have full sway without being hampered in any way, shape or manner. Our instructions were simply to design and produce the highest type, the most efficient worm gear axle that was possible to be made.

As a result we have been able to produce today unquestionably the most efficient, most durable and most fool-proof axle known to the manufacturing world—the axle which has been built for the sole purpose of giving the ultimate of service to the consumer, and not for the purpose of selling some particular type of bearing. And these same policies apply right on down through every product, whether it be rear axles, or front axles, springs or brake and radius rod equipments. Our thought has never been that of price in the sense of a cheap product. But only the production of a quality product that will give the maximum of service to the ultimate consumer and which can be sold at a price that is commercially practical. And these policies are of equal interest to the manufacturer, to the dealer and to the consumer. They protect you all.

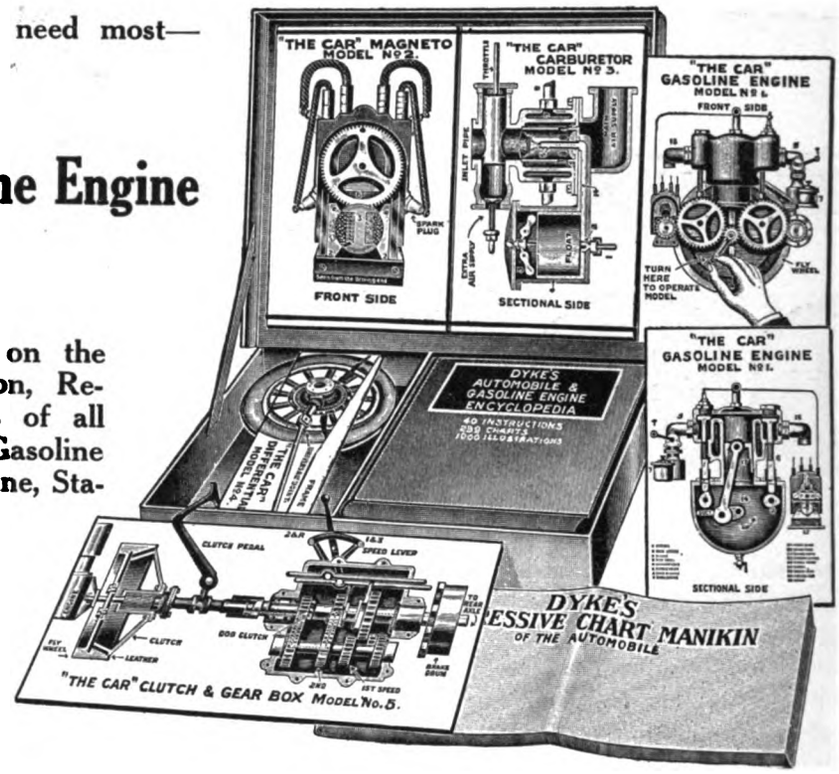
Wilkes-Barre, Penna.

CHICAGO: 112 S. Michigan Blvd. SAN FRANCISCO: 444 Market St. DETROIT: 1215 Woodward Ave.

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Here it is—just the thing you need most—

Dyke's Automobile & Gasoline Engine Instructor



A Practical Instructor treating on the Principle, Construction, Operation, Repairing, Troubles and Remedies of all Automobiles and all types of Gasoline Engines: Auto, Motorcycle, Marine, Stationary and Aero.

A NEW IDEA invented by A. L. Dyke, the originator of the first automobile supply business and publisher of the first practical book on automobiles in America. Endorsed by Lord Montagu, the leading motor authority of England, and Chas. Duryea, Chas. Splitdorf and others. Simple, Thorough, Practical. Prepared for the NOVICE, but a handy guide and reference for the EXPERT.

Dyke's Automobile & Gasoline Engine Instructor. Price $8.50

DESCRIPTION

ON THE WORKING MODELS YOU GET THE ACTUAL PRACTICE, see the actual INSIDE operation and learn the principle. The Instructions then explain and illustrate the variance in construction of the different parts in general use.

With these Models you learn more than you could from the real part itself because you see the inside operation—something impossible with the real part.

THE MODELS OPERATE BY HAND, ALL MOVING PARTS MADE OF REAL METAL. There are two sides to three of the models.

ON THE No. 1 ENGINE MODEL you learn the principle, then valve operation and how to set the valves. The same applies to all other models.

THE PROGRESSIVE CHART MANIKIN EXPLAINS WITH LARGE PROGRESSIVE DRAWINGS HOW THE AUTOMOBILE IS BUILT FROM THE GROUND UP; First the springs are mounted on the axles, then the frame on the springs, then the power plant on the frame, then the transmission and drive system, and so on until the car is completed. Key numbers of parts are referred to throughout the instructions.

THE ENCYCLOPEDIA contains 560 pages, 239 Charts and over 1000 Illustrations. It is divided into forty instructions, as follows:

> Assembly of the Car, Drives, Steering Springs & Brakes, Axles & Differentials, Clutches, Transmission or Change Gears, The Gasoline Engine, Engine Parts, Valve Timing, How Cylinders Fire, Two Cycle, Carburetion, Self Starters, Electric Ignition, Low Tension Coil, High Tension Coil, Wiring, Ignition, Timing, Various Ignition Systems, Low Tension Magneto, High Tension Magneto, Magneto Principle, Magneto Wiring, Magnetos Setting & Troubles, Storage Batteries, Lighting a Car, Cooling, Lubrication, Operating a Car, Rules of the Road, Care of the Car, Tires, Vulcanizing, Building a Garage & Repair Shop, Equipment, Tools, Use of Tools, Repairs & Adjustments, Digest of Troubles, Diagnosis & Remedies, Insurance, Laws, Horsepower, Tables, Measurements, Steam Car, Air Crafts, Pointers for Automobile Salesmen, Dictionary, Index.

EACH AND EVERY SUBJECT IS COVERED IN DETAIL WITH CLEAR ILLUSTRATIONS AND SIMPLE EXPLANATIONS—for instance: The Engine Subject covers all engines from 1 to 8 cylinder, explains the different valve systems and cylinders and crank shafts.

THE CARBURETION SUBJECT covers, first the principle of Carburetion, then the different constructions, and finally ends with clear detail rules for adjusting all leading carburetors.

THE ADJUSTMENT AND REPAIR INSTRUCTION is probably the most interesting. The subject of repairing begins with cleaning a car; cleaning carbon, chemically and mechanically; grinding valves; testing compression; taking up lost motion in valve stems and plungers; setting valves and timing the ignition; how to set all leading magnetos; scraping bearings; how to test for knocks and how to locate them; meshing the timing gears; fitting piston rings; carburetor repairs and adjustments; rewiring a car; ignition troubles and remedies; timer troubles and remedies; cooling troubles—how to clean and repair radiators; how to take up wear in differential; how to adjust the steering device; how to treat the clutch; lining up wheels, etc. In fact, every adjustment needed on a car is explained and fully illustrated.

THE INSTRUCTION ON SALESMANSHIP gives many pointers to the auto salesman in the way of advantages and disadvantages of different systems of ignition, carburetion, engines, etc.

THE INDEX AND THE DIGEST OF TROUBLES—With this Index the reader can find any trouble the auto is heir to, then turn to the Digest of Troubles and learn the cause and remedy, and then turn to the Repair Section and see how to repair it, or turn to the instruction and learn the principle and construction.

VALUE OF THIS INSTRUCTOR TO YOU. It will train you to become:

> (1) AN ENGINE EXPERT capable of diagnosing ignition, carburetion, valve timing, cooling troubles, and remedying them.
> (2) A DIAGNOSIST—who from knowing the principle and construction of all these subjects can instantly tell the cause of any trouble and apply the remedy.
> (3) A RUNNING GEAR EXPERT capable of diagnosing and remedying such troubles as differential, transmission, axles, brakes, steering wheels and axle troubles.
> (4) AN AUTO MECHANICIAN who can adjust and remedy all the troubles after diagnosing—the subject of repairing in this Instructor is complete in every respect.

YOU CAN'T AFFORD TO BE WITHOUT DYKE'S AUTOMOBILE AND GASOLINE INSTRUCTOR.
THE INSTRUCTOR CONSISTS OF:

> 5 Working Models
> Progressive Chart Manikin
> Book—Dyke's Automobile and Gasoline Engine Encyclopedia.

PRICE of the Dyke Automobile and Gasoline Engine INSTRUCTOR, as shown above, complete in a special box—$8.50. (Add 60c. if wanted prepaid.)

NOTE:—The Book—Dyke's Automobile and Gasoline Engine ENCYCLOPEDIA can be purchased separately, if desired. Price—$3.00. (Add 25c. if wanted prepaid.)

NOTE:—THE 5 WORKING MODELS can be purchased separately from the Instructor, but in sets of 5 only. Price for the five—$5.75. (Add 48c. if wanted prepaid.)

BOOK DEPARTMENT **MOTOR WORLD** **231 West 39th St. NEW YORK CITY**

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EISEMANN

Eisemann products are not affected in any way by war conditions in Europe.

Not only have we on hand ample stock and materials to take care of our regular customers for many months to come—but we are also in position to increase our production greatly should occasion arise.

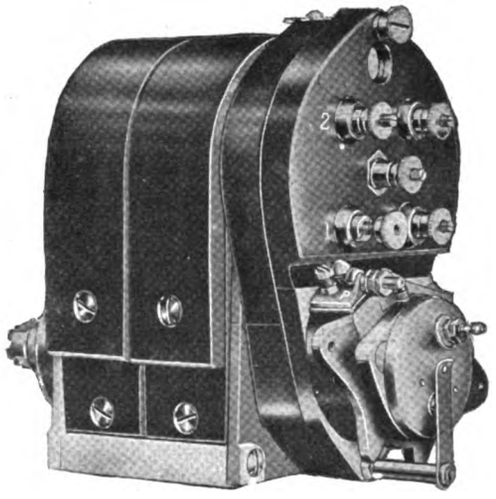
We, therefore, have no hesitancy in offering our assistance to any and all manufacturers who may not be able to have their requirements taken care of elsewhere.

Eisemann Not Affected by War

The Eisemann Magneto Co.

Sales and General Offices
32-33d St., Brooklyn, N. Y.

New York 123 W. 52d St. | Indianapolis, Ind. 415-417 N. Capitol Ave. | Detroit, Mich. 802 Woodward Ave.



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New Departure Ball Bearings

Unexcelled—

American Made for American Trade

Materials—The best steel obtainable.

Manufacture — New England skill, well-known for excelling workmanship.

Finish — The finesse of modern accuracy.

Deliveries — We are the largest manufacturers of ball bearings in the world. In placing your orders with us, you are absolutely certain of satisfactory quality and specified deliveries.

Write us today regarding your requirements

THE NEW DEPARTURE MFG. CO., BRISTOL, CONN.

Western Branch: 1016 Ford Bldg., Detroit, Mich.

The logic of advertising to the dealer first, most and all the time has been the foundation of nearly every successful advertising campaign conducted in the automobile business

The dealer is a wholesale buyer, either directly or indirectly, of every meritorious product.

The dealer is more potent in moulding public opinion as to complete cars or accessories than any other individual in the industry.

Motor World Is the Dealer's Favorite Trade Paper

Motor World Publishing Company

231-241 WEST 39th STREET, NEW YORK

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BOSCH SERVICE

stations have been appointed in the most important centers of the United States and Canada, centers that facilitate the shipping of parts or the sending of advice. These stations are for the sole purpose of rendering every possible assistance to Bosch users.

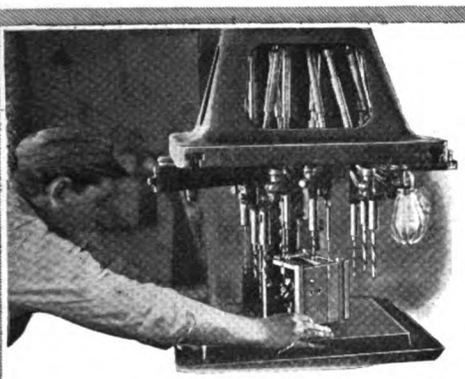
BE SATISFIED **SPECIFY BOSCH**

Correspondence always invited

BOSCH MAGNETO CO., 224 West 46th Street, New York

Chicago — Detroit **San Francisco — Toronto**

Over 250 Service Stations



INTERCHANGEABILITY is a long word that means much. It applies to the Zenith as a whole and also to its various parts. Take a given size Zenith from a motor and replace with a duplicate and you always get the same result. There are no adjustments. There are no variations. Our catalog explains. There is one for you.

Many Drills Make Light Work

AMONG the specialized operations entering into the high grade Zenith comes this simple act of drilling. It is simple because the brain work has been done in advance. Careless hands can't go wrong here.

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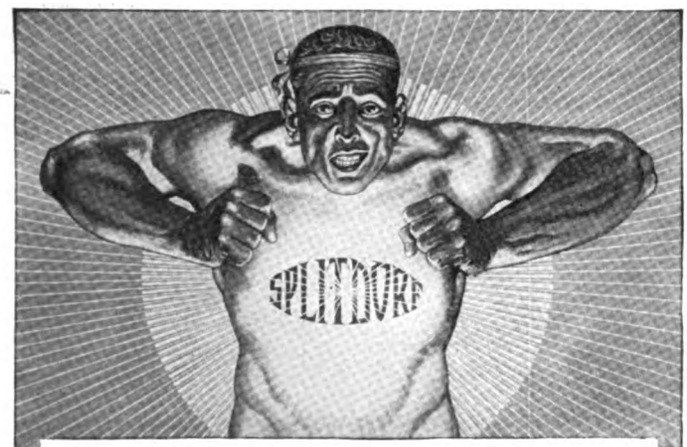
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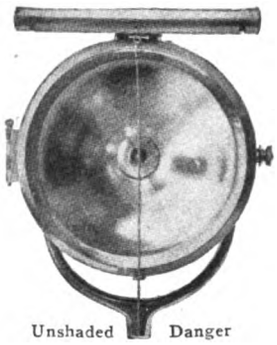
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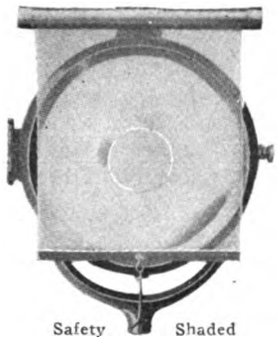
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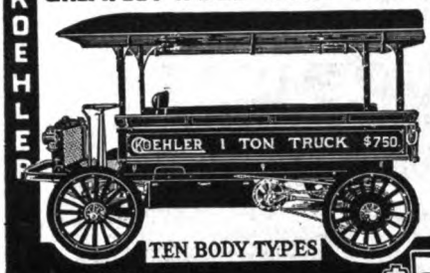
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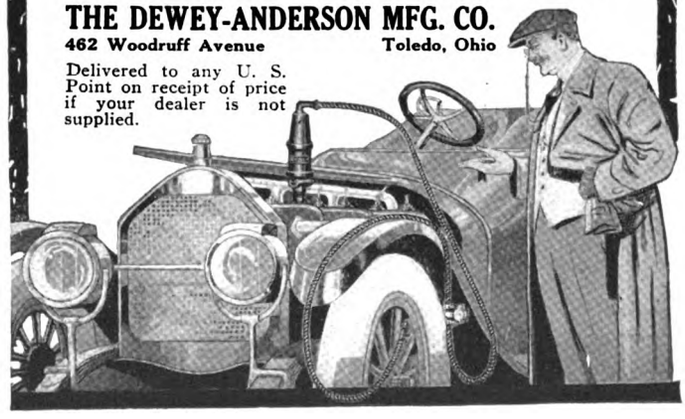
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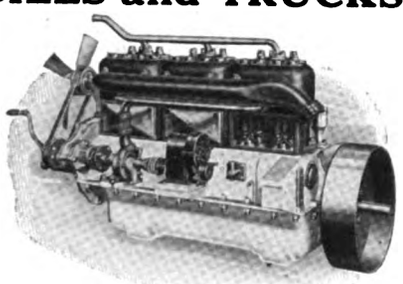
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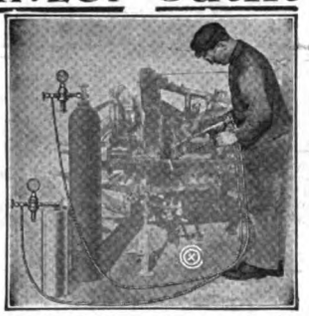
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THE REPUBLIC RUBBER CO.
YOUNGSTOWN, OHIO.

REPUBLIC Staggard TREAD PAT. SEPT. 15.22. 1908

BRANCHES AND AGENCIES IN THE PRINCIPAL CITIES.

SHALER $3.50

Safety Vul-Kit
Vulcanizer

Save Tires—Saves Repair Bills

Repairs punctures, blow-outs and cuts in casings or tubes, perfectly—makes repair strongest part of tire. No watching, no regulating, automatic in operation. Impossible to undercure or overcure. Has no open flame—no danger if accidentally upset. Anybody can use it. Furnished complete at $3.50 with all repair material. Investigate.

Send for Book "Care and Repair of Tires"—its free.

C. A. SHALER CO. 435 Fourth St. Waupun, Wis.

For anything in sheet metal that goes onto an automobile ask the

HAYES MANUFACTURING COMPANY

DETROIT, MICHIGAN

Largest Users of Sheet Metal in the World

BOOTH FELT

Washers, Gaskets, Packings and so forth are made of the best quality felt only. When necessary, orders received one day are shipped the next.

N. E. BOOTH, 642-644 Pacific St., Brooklyn, N. Y.

HESS AUTOMOBILE AXLES

Your Car as Good as Its Axles
Hess Axles Make a Good Car
Enough Said

HESS SPRING & AXLE COMPANY, Cincinnati, Ohio

MOTOR WORLD

"The Paper That Is Read, Not Merely Looked At"

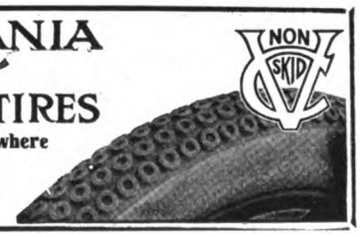
It ought to be a regular weekly visitor in your office, Mr. Dealer. $2.00 per year—a small price for a big value. Subscribe today.

Motor World Publishing Co., 231-241 W. 39th St., N. Y.

PENNSYLVANIA Oilproof VACUUM CUP TIRES

Making Their Mark Everywhere

Pennsylvania Rubber Company
Jeannette, Penn.



ERE-LONG YOU'LL USE

LONG

Cellular—Honeycomb—Spiral Tube Cooling Systems for Pleasure Cars — Trucks — Tractors.

Write to LONG MANUFACTURING COMPANY, Detroit, U. S. A.

STUTZ

Official Road Race Champion

The success of Stutz racing cars in contests means greater power and stronger parts in the vital places guaranteeing longer life and better service on the road. *Write for literature.*

Stutz Motor Car Company, Indianapolis

ONE-HAND TOP
SHARRER

TOP MAKERS don't overlook the

"Sharrer One Hand Top" agency

Be prepared for the Spring rush, write quick.

SHARRER PATENT TOP CO. Inc.
247 West 55th Street New York

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Reo the Fifth

A Super-Car

$1,175 *Equipped F. O. B. Lansing* — *TOURING CAR or ROADSTER*

The Story of Reo Success

And Why a Few More May Now Share It

The season just past was by thousands of cars, the largest in Reo history. Month after month we built 60 per day, but we never caught up with our orders.

This summer we started three enormous additions. Now we have a capacity of ninety per day. We are ready to invite a few more dealers—in unassigned sections—to share in this Reo success.

The Past

The Reo is an old, old car. Its builder—Mr. R. E. Olds—is the Dean of Designers. He has built cars for 27 years.

But Reo the Fifth came out three years ago as his final attainment — as the car which marked his limit. It has changed in body design and equipment. It has been bettered in countless ways. But it always has embodied the best we know, regardless of time or cost.

It cost us then about $200 more than if built by the usual standards. And it still costs about that extra.

It is a car of extremes—of overcapacity—of costly and careful construction. But tremendous output and standardization have brought the cost down. The price today, with full equipment, is $220 less than it used to be.

Reo the Fifth was built for men who buy their cars to keep. For men who know troubles, and wish to avoid them. For men who seek low cost for upkeep. And for men who want their cars to stay new.

There was never a car in this class which, year after year, would render such ideal service.

We told men about it by the best advertising campaign—and one of the largest—that ever was known in this line. The first season's demand was twice our factory output. And that demand has grown and grown, as these cars by the tens of thousands proved every claim we made.

The Future

After three years, Reo the Fifth stands on the firmest foundation ever given a car in this class. Our sales are exceeding by 50 per cent every similar-season record.

Our present price gives the greatest value to be found in this class of car. Our design and equipment are up-to-the-moment. And our prestige makes Reo the Fifth the leader of its class.

It is, beyond any question, the best-built car that ever sold near this price. It is, with its new-style body, one of the handsomest cars of the day.

No car is better advertised. And no name in Motordom stands for more that men look for today.

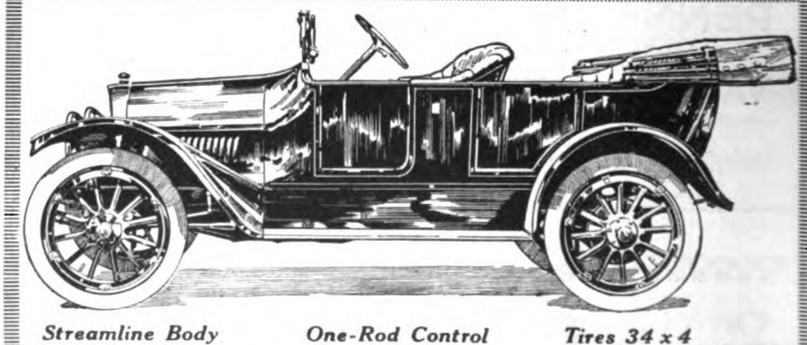
We have dealers now in 1155 towns. With our increased capacity we can add a few more —not many. We shall be glad to hear from dealers who are trying, as we are, to build on firm foundations.

Not a car in this class begins to offer such men such an opportunity.

REO MOTOR CAR COMPANY

Lansing, Michigan

Canadian Factory, St. Catharines, Ont.
Canadian Price, $1575



Streamline Body
Electric Lights
Electric Starter
Dimming Searchlights

One-Rod Control
Non-Skid Tires on Rear Wheels
35 Horsepower

Tires 34 x 4
15 Roller Bearings
190 Drop Forgings
Complete Equipment

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KLAXON



You may have been offered a signal "just-like," "just-as-good-as," "same-thing-as" the Klaxon—

But you never heard anyone—motorist, car agent or supply dealer—claim that a signal was BETTER than the Klaxon.

Just what does this fact mean to you?

This advertisement planned, written and set up entirely in the Klaxon Factory. Type composition by the Klaxon Press with "Klaxon" type especially designed by Goudy

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Borland Model Fifty; 4-Passenger, Front or Rear-Drive Brougham; Lever-Steer; Hand Speed-Control; 40-Cell, 11-Plate Exide Batteries; 34 x 4 Cushion, or Pneumatic Tires; 96 inch Wheel Base

$2550

MODEL Fifty of the American Line is a type of car for which there exists a tremendous demand. Model Fifty is attractive in appearance, satisfactory in service. And you can't duplicate its specifications in any other line of electrics within hundreds of dollars of the price of the Model Fifty. Yet Model Fifty is only one of fourteen models comprising this complete line of electrics.

Think what an opportunity that means for dealers—to sell a line of cars that embody practically every style and mechanical feature asked for by buyers, and at prices that of themselves will almost sell cars.

Here's a tip. Only a few choice districts are left. The right men in those districts will be given wonderful opportunities by us to secure business, and to profit from that business. If you want the details, a post-card will bring them. Send it today.

THE COMPLETE LINE

Model		Type	Pass.	Drive	Price
Argo	B	Roadster	Four		$2350
	A	Coupe	Four	Rear	2650
	C	Coupe	Five	Forward	2800
Borland	52	Roadster	Two		2250
	45	Coupe	Four	Rear	2400
	50	Brougham	Four	Forward	2600
	50	Brougham	Four	Rear	$2550
	60	Limousine	Seven	Outside	5500
Broc	28	Brougham	Four	Rear	2900
	29	Brougham	Four	Rear	2950
	31	Brougham	Four	Forward	2950
	33	Brougham	Five	Rear	3100
	34	Brougham	Five	Forward	3150
	36	Brougham	Five	Double	3200

All Argo Models, Borland Roadster and Limousine are wheel-steered. All Argo Models have foot speed-control. All Borland and Broc Models have hand speed-control.

The American Electric Car Co.

ARGO BORLAND BROC

Offices and Factory Saginaw, Michigan

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MOTOR WORLD

A Trade Paper Giving the World's Motor New

Volume XL
No. 10

New York, September 2, 1914

Ten cents a cop
Two dollars a ye

GRAY & DAVIS
STARTING - LIGHTING SYSTEM

Two Units
6 Volts

Greater power, greater energy, light weight, and full protection of the battery

The Gray & Davis is the logical system. Logical because of its Two-Unit principle and efficient design.

There is no attempt to combine the important starting-lighting functions in one instrument.

No complicated mechanism, involved wiring, or increased battery weight, size, and expense.

This year, five additional manufacturers who have not heretofore used this system, are added to the list. Why?

Because, the Gray & Davis Two-Unit system is recognized as the most highly perfected electric equipment on the market.

GRAY & DAVIS, Inc. **Boston, Mass.**

Published Weekly by the Motor World Publishing Company, 231-241 West 39th St., New York

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BARRETT AUTOMOBILE JACKS



No. 345
A high-grade Jack for light and medium light cars like the Ford, Buick, Overland, Studebaker, Maxwell, etc.
Malleable iron base. Height 11 ins. Weight 7 lbs.

Few men anticipate jack trouble at the time they buy their cars

The necessity for efficient jack equipment is not then as clear as it is sure to be sooner or later. This results in the fact that so many cars come equipped with mere makeshift jacks.

Every car that does not carry a Barrett Jack as a stock equipment means a wide open opportunity for the Barrett dealer.

Sell your customer a Barrett to overcome his jack troubles

Point out to him the need of an absolutely dependable jack. Demonstrate to him the superiority of the Barrett. Show him how a Barrett will meet every jack requirement; how it will eliminate danger and delay by its swiftness and easy operation.

Advise him to buy a Barrett—especially adapted to his particular make of car. This is real dealer service; the kind that makes sales, and makes friends.

Duff's New Catalog of Barrett Jacks

is the most comprehensive automobile jack catalog extant. Tells how to select the right jack; how to operate jacks; tables of weights and sizes; 1914 Barrett Specifications, and other valuable jack information.

Let us send you a supply of these books and other jack literature for your counters. They are powerful sales helps. Advise how many you will need, and they will come forward to you at once.

The DUFF MANUFACTURING CO., Pittsburgh, Pa.

ESTABLISHED 1883

New York, 50 Church Street — Chicago, People's Gas Building
Atlanta, Candler Building — San Francisco, Monadnock Building

Foreign Distributors: European Continent — ARMAND D. RIVIERE et CIE., Paris, France. Great Britain — WHITE-COLEMAN MOTORS, Ltd., Carlow St., Camden Town, London, N. W. Canada — Canadian Fairbanks Morse Co.



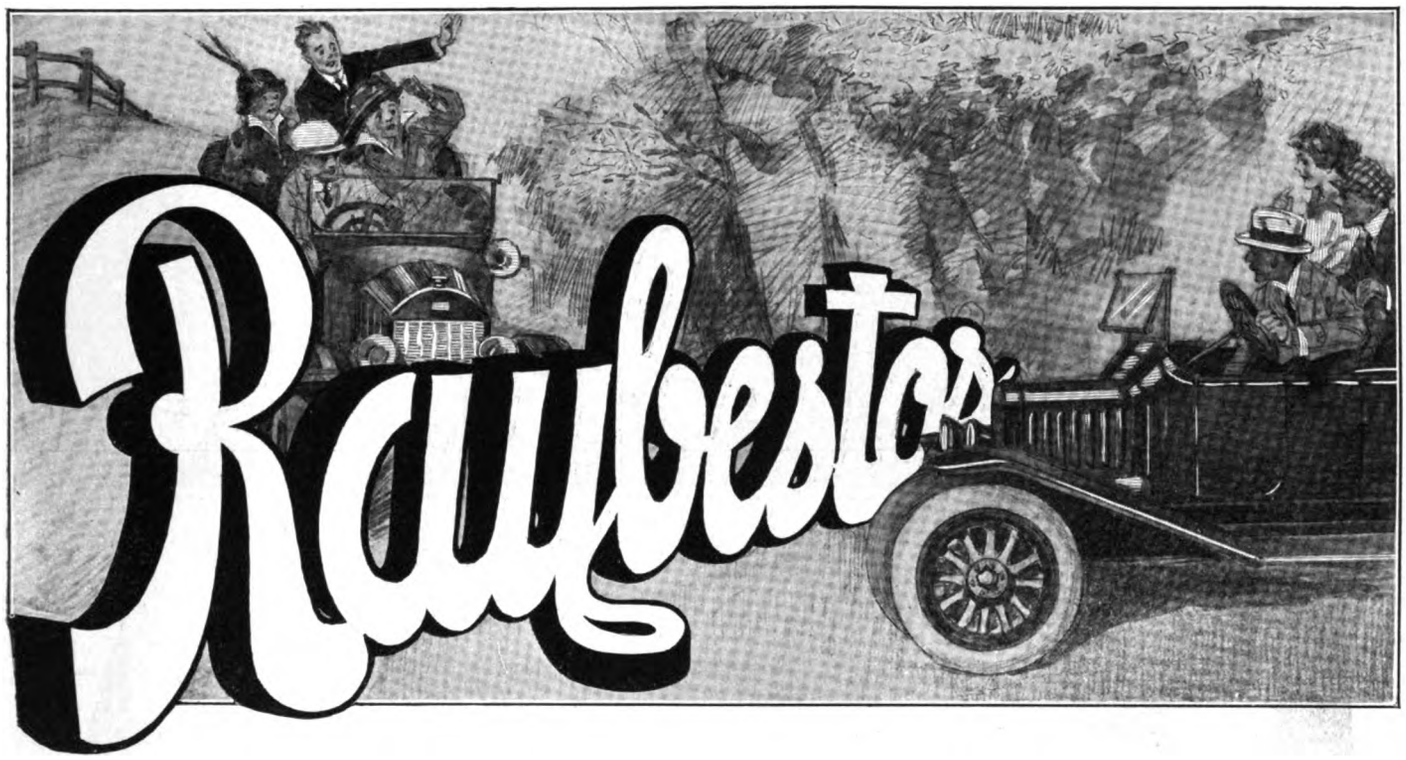
Nos. 066, 077, 088
1 ton capacity. (Foot-lift patents pending.)

No. 145
1500 lbs. capacity. (Design patented Feb. 4th, 1913. Mechanism patents pending.

Nos. 06, 07, 08
1 ton capacity. (Patents pending.)



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"Hey, look out there!"
"Oh, we're all right. My brakes hold like a stone wall ten feet thick."
"So do mine—mine are lined with Raybestos."
"Sure. Mine are too."

Like a Solid Wall of Safety

You will never have an accident due to slipping brakes if they are lined with Raybestos. Raybestos retains its tremendous gripping power even when worn down as "thin as a shadow," because it is made of **long fibre** asbestos and impregnated with our special treatment **in every shred.** Our exclusive patented process alone makes this possible.

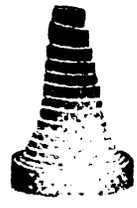
The proof of Raybestos quality is this guarantee: If it fails to give a full year's service, we will furnish new lining without charge. No other brake lining has a definite guarantee.

Never forget that your car is no safer than its brake lining. Specify Raybestos. Insist on getting it. You will know it by its silver edges and the name on every foot.

THE ROYAL EQUIPMENT COMPANY

1379 Bostwick Avenue Bridgeport, Conn.

TRADE MARK Raybestos REG. U.S. PAT. OFF.



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Firestone Tires—a Double Triumph

—the triumph of Firestone quality, as proved in the world's greatest public tests and in daily service for the past fourteen years.

—the triumph of Firestone manufacturing and marketing efficiency, as proved by the price lists of eight other makers of any reputation.

The triumphant quality of Firestone tires, the extra mileage, safety and comfort cost you no more than the average. The law of specialized production and the law of volume give you that advantage.

The picked tire specialists of America, with the matchless facilities of America's largest exclusive tire factory, save you enough in manufacture to give you more in quality and quantity.

Make the Firestone advantage in production your advantage in buying. Get the extra rubber, fabric and workmanship in Firestones at the price of ordinary tires.

Call on any good dealer for Firestones. Long-established dealers, like long-experienced drivers, are Firestone enthusiasts

Firestone Tire and Rubber Company, Akron, Ohio—Branches and Dealers Everywhere

"America's Largest Exclusive Tire and Rim Makers"

Firestone

NON SKID TIRES

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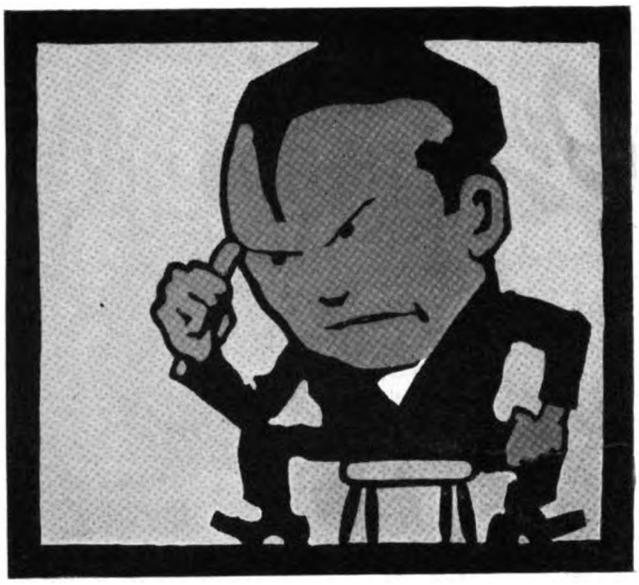
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The man who thinks most about automobile tires doesn't think about them at all after he's put Kelly-Springfield Tires and Tubes on his car. We've done the thinking.



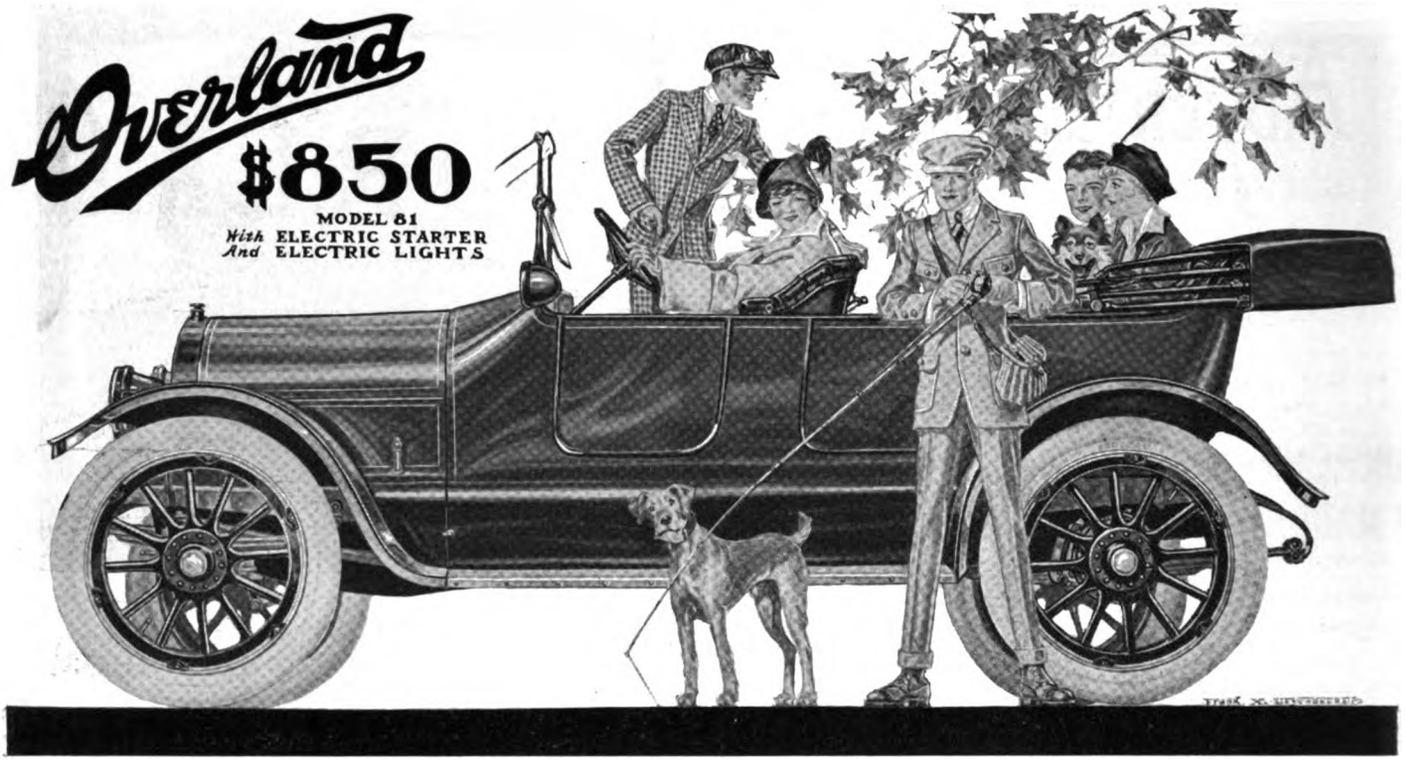
Kelly-Springfield Tire Company

Corner Broadway and 57th Street, New York

Branch offices in New York, Chicago, Philadelphia, Boston, St. Louis, Detroit, Cincinnati, San Francisco, Los Angeles, Cleveland, Seattle, Atlanta, Akron, O.

The Hearn Tire & Rubber Co., Columbus, O.
Bering Tire & Rubber Co., Houston, Texas
Boss Rubber Co., Denver, Colorado Springs and Pueblo
The Olmsted Co., Inc., Syracuse, N. Y.
Southern Hdwe. & Woodstock Co., Ltd., New Orleans, La.
L. J. Barth, Rochester, N. Y.
Seifert & Baine, Newark, N. J.
Atkinson Tire & Supply Co., Jacksonville, Fla.
Central Rubber & Supply Co., Indianapolis, Ind.
C. D. Franke & Co., Charleston, S. C.
K. & S. Auto Tire Co., Limited, Toronto, Can.
Todd Rubber Co., New Haven, Conn.
Barnard & Michael, Buffalo, N. Y.

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The Unexpected—

An Overland—electrically started, electrically lighted, stream-line body, 4 inch tires, large five-passenger touring car—priced at only $850.

This is the very first car of this design, quality, size, capacity, power and electrical equipment, to sell below $1000.

Specifications:

30 H. P. motor
Stream-line body
Ample room for five passengers
Electrically started
Electrically lighted
Electric horn
High tension magneto
All electric switches on instrument board of cowl dash
Ventilating, rain-vision type windshield
High-grade upholstery
Thermo-syphon cooling
Five bearing crankshaft
Rear axle; floating type
Rear springs; extra long, underslung, ¾ elliptic
106 inch wheelbase
33 inch x 4 inch tires
Demountable rims
One extra rim
Left-hand drive
Center control
Body color: Brewster green with ivory white striping
Complete equipment, including electric head, side, dash and tail lights, electric horn, top, top cover, robe rail, speedometer and ventilating, rain-vision type windshield

Two-Passenger Roadster, - - - $795
Delivery Wagon with closed body, - - $895
Delivery Wagon with open body - - $850
The larger four-cylinder Overland Touring Car $1075
35 H. P. four-passenger Coupe, - - $1600

All Prices f. o. b. Toledo, Ohio

Handsome 1915 catalogue on request. Please address Dept. 50.

The Willys-Overland Company, Toledo, Ohio

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MOTOR WORLD

Vol. XL New York, U. S. A., Wednesday, September 2, 1914 No. 10

INCREASE OF 73 PER CENT MADE BY NEWARK DEALERS

Business Booming in All Quarters Despite Shortage of Cars—Record Sales of 1915 Models is Predicted.

For the first seven months of 1914 the average increase in sales by Newark (N. J.) dealers is 73 per cent. This is the best record that has ever been made by dealers in this section. Almost without exception a shortage of cars is the rule. It is likely that if the factories could have supplied the demand the increase would have been considerably larger. On the whole, cars selling for less than $2,500 appear to be the most popular.

As usual, and as was to be expected, the Ford company leads in sales. More than 900 cars have been disposed of; Philip Plaistridge, the Ford dealer, reports that as last year's sales totaled but 575 cars, the increase this year is nearly 200 per cent.

J. W. Mason, Velie and Briscoe dealer, has sold 71 cars to date, 28 of them during the months of July and August. Shipments have been prompt and deliveries immediate.

The Reo Motor Car Co. reports the best year it has ever had, with a 300 per cent increase. Including wholesale and retail, 499 cars have been sold, 317 of them to the wholesale trade. During the last 10 days nine cars were sold, and as an indication of the bright outlook it is pointed out that the August, 1914, business was $9,000 ahead of that for August, 1913.

The White company reports an increase of 15 per cent.

The Buick Motor Co. has increased its sales 52 per cent over those for 1913. This company is six weeks ahead of its factory allotment and predicts the biggest fall business in its history.

The C. F. Briggs Co., Oakland distributers, reports that its business is on a par with that for 1913 and that 1915 sales are very promising and probably will show a substantial increase.

The Paddock-Tusi Motor Car Co. has increased its allotment of Chalmers cars for 1915 by 30 per cent. Chalmers sales for 1914 are 35 per cent greater than for 1913.

The Stutz Motor Car Co., which handles King cars in addition to the Stutz, has disposed of 65 cars; this represents an increase of 75 per cent.

(Continued on page 12.)

New York Branch for Briscoe.

Briscoe cars, which are produced by the Briscoe Motor Co., Jackson, Mich., are to have direct factory representation in the metropolitan territory. The Briscoe Auto Co. has been formed for the purpose in New York and is headed by Horace De Lisser. A store will be opened at 1794 Broadway.

Derby Gets Oldsmobiles for Brooklyn.

C. B. Derby & Co., local agent for the Abbott-Detroit and Westcott motor cars, has been appointed distributer in Brooklyn for the Oldsmobile. They have established offices and salesrooms at 1270 Bedford avenue.

Greenhut to Handle Argo in New York.

Benjamin Briscoe's light car, the Argo, which is produced by the Argo Motor Co., and which will sell for $295, is to be handled in the metropolitan territory by the J. B. Greenhut Co., New York city.

Walpole Hearing Postponed to Oct. 15.

On motion of the creditors, Judge Dodge, in the U. S. District Court, Boston, Mass., on Monday postponed the hearing on the sale of the Walpole Tire & Rubber Co. until October 15.

Colt-Stratton Co. to Handle Dodge.

The Colt-Stratton Co., Eastern distributer of the Cole car, has secured the distribution of the Dodge Bros.' car.

USED CAR VALUES SET BY CENTRAL MARKET REPORT

Chicago Trade Body Issues Quarterly Report Based on Actual Sales—For Use of Dealers Throughout United States.

A feasible solution of the used-car problem among dealers is offered in the Central Market Report on used cars which has just been issued by the Chicago Automobile Trade Association. This market report gives the actual selling values in Chicago during January, February and March of 100 different makes of gasolene cars and fourteen different makes of electrics.

This market report is not based on calculation, but on actual sales, the sale price of a 1910 Winton car, for example, being based on the sales of these models in Chicago during the first three months of the year. So it is with the other 99 makes of gasolene cars, as well as the electrics.

The Central Used-Car Market Reports are to be issued quarterly. The first volume is a 36-page booklet, paper bound and 7 x 10 inches in size. It contains the Chicago values of 735 different used cars. The Market Report gives the actual value at which these cars sold during the first three months of the year. These selling prices are divided into three divisions, one in which the cars were sold by the dealer just as received in the trade deal. A second column shows the prices at which many of the cars sold after being overhauled for minor troubles. There is a third column which shows what the cars sold for after being entirely overhauled and rebuilt and sold under some form of guarantee by the dealer.

A new volume of this Central Market Report will be issued every three months and the values in each volume will be based on actual sales of the preceding

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three months. The second volume will appear September 5, and it, too, like the first volume will have market values based on the Chicago territory. For future volumes it is proposed to get quotations from many other sections of the country, such as the Pacific Coast, New England, the Southeast, the Southwest, Central States, and perhaps other zones. In fact, it is planned to make the Central Market Report serve as useful a purpose for all dealers as does the daily stock quotation sheets for stock brokers.

These Used-Car Market Reports are intended for use by dealers in the entire country. Although the first volume has been out little more than a couple of weeks, it has been purchased by dealers from Boston to New Orleans and San Francisco. The service, four volumes annually, is sold at $24 per year.

The idea of a Used-Car Central Market Report was conceived in Chicago by H. M. Allison, president of the Chicago Automobile Trade Association, on his election to that position last February. The idea was made a reality within the past six months by President Allison and his energetic board of directors.

The Used-Car Central Market Report is filled from cover to cover with valuations of used cars. If you are a dealer and a prospect wants to trade in a 1909 Chalmers Model F, 24-horsepower runabout, you can look up your Central Market Report and see that the average sales for this car in trades has been $325, and, further, that its value has been appraised by other dealers at $220 with 20 other Chalmers models, any one of which you might have to take in trade; and so on, with an even hundred other makes of gasolene cars; besides these are fourteen different makes of electrics.

Fig. 2 is a specimen page taken from the first issue of the Used-Car Central Market Report. It shows the valuation placed on used Packard cars. The first column gives the model, the second the year of its manufacture, the third its body type, whether roadster, touring or runabout; this is followed by passenger capacity, number of cylinders, horsepower, calculated by S. A. E. or A. L. A. M. formulae, and then comes the list price of the car when new. Next you come to the real information, the column headed "Allowance," which means what the dealer selling Packard cars is supposed to allow for the different models. Do not pay too much attention to this column, but pass on to the column marked "As is." This column contains the information you want. "As

(Continued on page 14.)

TIRE PRICES INACTIVE DURING THE PAST WEEK

Pennsylvania Advances Prices of Vacuum Cup Tires 5 Per Cent—Other Makers Stand Pat—Some Rubber Coming.

Tire prices have undergone no material changes during the past week. The Pennsylvania Tire Co. announces, however, that it has increased the price on its vacuum cups 5 per cent; the increase of 12½ per cent on its plain tread remains.

Those tire prices which remain the same as before the war are as follows: Kelly-Springfield, Lee, McGraw, Michelin, Overman, Goodyear, Ten Broeck and Swinehart. The following tire prices are increased: Empire, 12½ per cent; Federal, 12½ per cent; Firestone, 12½ per cent; Fisk, 15 per cent; Goodrich and Diamond, 12½ per cent; Pennsylvania, 12½ per cent; Republic, 12½ per cent; United States, 12½ per cent, and Lee, 12½ per cent.

The Goodyear Tire & Rubber Co. has obtained 1,500,000 pounds of rubber from the London market. This big supply is now nearly all on the way to the factory in Akron. The company has since taken other steps to insure a continuous supply.

Several other companies as well have succeeded in getting small lots of rubber, but the lack of ocean transportation facilities has greatly hindered them in getting it to America.

The demoralization of the foreign exchange market is giving fully as much trouble. As is well known, the principal sources from which crude rubber is obtained are Brazil and the Far East. In both cases the product is paid for through London. Unless the foreign exchange market improves substantially in the near future it seems likely that the buying of crude rubber will be reduced considerably.

Recent Trade Changes in Newark.

During the last few weeks, a number of Newark, N. J., motor car agencies have made important changes. L. J. Wyckoff, for many years the Ford agent, has taken on two new cars, the Oldsmobile four and the Saxon. The taking on of the small Oldsmobile follows somewhat the plan of New York city Oldsmobile dealer, who has established a number of agencies throughout the city for the small car. The Oldsmobile Co. of New Jersey, 254 Central avenue, will, in the near future, become the state agency for the Oldsmobile. It expects to establish about 15 small car agencies throughout the state. Hereafter all sales of Stevens-Duryea cars for the Newark territory, will be conducted at the New York city agency, 1875 Broadway. The service station, however, will be maintained in Newark.

Milwaukee Branch for Ford.

The Hickman-Lauson-Diener Co., Milwaukee, Wis., state agent for the Ford since the Detroit manufacturer first brought out his popular-priced car, will discontinue business on October 1, 1914, the close of its fiscal year, and the Ford representation will then be in the hands of a direct factory representative, who will also have charge of the Milwaukee Ford assembling plant. The Milwaukee Ford agency consisted of Isaac G. Hickman, C. P. Lauson and Walter H. Diener. Mr. Hickman and Mr. Lauson will retire, while Mr. Diener and J. E. Nelson, head salesman, will form a partnership and take a large territory in behalf of the Haynes, of Kokomo. The Haynes agency will occupy the present downtown Ford garage on 8th street, just south of Grand avenue.

Combination Mfg. Takes Over Keaton.

The Keaton Tire & Rubber Co., New York city, manufacturers of special brand tires and tubes, has been taken over by the Combination Rubber Mfg. Co., which will continue the business. H. A. Forbes, formerly manager of the Keaton company, has been made manager of the tire department of the Combination company; Frank C. Braden has been made sales manager of the tire department.

S. A. E. Postpones European Trip.

The second European trip of the Society of Automobile Engineers has been postponed indefinitely. The sailing date had been set for about October 10 and the first stop was to have been Paris, but present war conditions have necessitated the postponement. The trip, as outlined, extended through France, Italy, Switzerland, Germany and England.

Chandler Sparton N. Y. Representative.

W. R. Chandler has been allotted a large territory in the East for the Sparks-Withington Co., Jackson, Mich., including New York, Pennsylvania, Delaware and the District of Columbia. He has established headquarters in the U. S. Rubber building, Broadway and 58th street.

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INDIVIDUAL CONVENTIONS PREFERRED BY ANDERSON

Found to Be More Satisfactory to Entertain Dealers from Different Territories Separately—Those Who Attended.

Instead of holding a single convention for all their branch managers, dealers, salesmen, etc., the Anderson Electric Car Co., Detroit, Mich., has been holding and will still hold several conventions.

One of the first conventions held was that of salesmen, or rather direct factory men; this was followed by a convention of branch managers, one of Pacific Coast dealers, another of Southern dealers and one of Central West dealers.

At these meetings, which were held at the big plant on Clay and Riopelle, about 150 co-workers of the Anderson company from all over the country have taken part. The 1915 models were thoroughly explained; sales methods and plans for selling campaigns were talked about; there were exchanges of views concerning the used electric vehicle problem and concerning the garage systems and facilities.

"We are now employing 1,200 men," said A. C. Downing, of the Anderson company, "and the outlook for 1915 is very satisfactory to us. We are planning to build 30 to 35 per cent more vehicles than we did this year, the demand all over the country being larger than ever.

"There seems to be a general tendency to help the electric vehicle business, as we notice that many other trades or industries or business which heretofore could have assisted the electric vehicle trade in becoming bigger and expanding more rapidly are now coming to the front and helping. Probably the biggest improvement in this connection is the assistance given by the electric light companies, which are not only giving more favorable rates but are employing electric vehicle experts to give advice to electric vehicle users."

Among those who came to detroit for the conventions were the following branch managers: Samuel W. Menefee, New York city; Albert Weatherby, Boston, Mass.; D. E. Whipple, Chicago, Ill.; W. Reese Parker, Minneapolis, Minn.; Albert T. Clark, Kansas City, Mo.

The following territorial salesmen or direct factory men came: H. H. Herr, Dallas, Tex., whose territory is Texas and Louisiana; Elliot E. Higgens, Seattle, Wash., who takes care of the Pacific Coast; T. A. Wright, Des Moines, Ia., who looks after Iowa and Nebraska; B. A. Adams, Chicago, whose territory consists of Illinois and Wisconsin; W. W. Bond, Indianapolis, who has Indiana to take care of; H. A. Miller, the Ohio man, with headquarters in Columbus; G. B. Pratt, with residence in Gowand, N. Y., who takes care of Western New York and Pennsylvania; N. J. Bissell, Washington, D. C., whose territory is Eastern Pennsylvania and Maryland; F. H. Hoover, New York city, who looks out for matters concerning New England, and W. R. Jenny, Southern states.

Dealers from the Pacific Coast who attended were: I. H. Stratton, Southern California Electric Garage, Los Angeles; Mark Roberts, Detroit Electric Car Co., San Diego, Cal.; A. C. Kendall, Kendall Auto Co., Pasadena, Cal.; A. B. Swauger, United Electric Vehicle Co., San Francisco and Oakland, Cal.; Frank C. Riggs, Frank C. Riggs Co., Portland, Ore.; F. W. Wing, Broadway Auto Co., Seattle, Wash.; James F. Pieper, Electric Vehicle Agency, Sacramento, Cal.; J. M. Wood, Wood Motor Vehicle Co., Victoria, B. C., Canada.

"Safety Zones" For Surface Cars.

The ordinance requiring New York city surface cars to stop at the "near" side at street crossings became effective yesterday and the street railway companies have made plans to comply promptly with its requirements. Following the successful culmination of its efforts in this direction, the Safety First Society has devised a plan for creating safety zones on the pavements at points where the surface cars will stop hereafter.

These safety zones are to be enclosed by a painted white strip about 8 inches wide and 40 feet long, extending 8 feet from the outer rail, giving ample area for the use of patrons of surface car lines. The motormen will be instructed to stop their cars opposite the safety zones, so that passengers may enter the cars at such points. Vehicular traffic will not be permitted to invade the safety zones.

At a recent meeting of the committee on street safety held at Police Headquarters, the plan for establishing the safety zones was presented on behalf of the Safety First Society and was unanimously approved by the inspectors of traffic, comprising this committee, of which Chief Inspector Max Schmittberger is chairman.

FRANKLIN DEALERS TO GO 100 MILES ON LOW GEAR

Every Agent in the Country to Drive All Day at 10 Miles an Hour—Will Test Efficiency of Air Cooling.

The Franklin Automobile Co., Syracuse, N. Y., which held a nation-wide fuel economy test May 1, is to follow it up September 24 by having each Franklin dealer in this country run 100 miles on low gear. The test is designed to prove the efficiency of the Franklin air-cooled motor.

Each dealer will make the run with a Franklin 6-30, carrying a couple of newspaper men and an automobile official as observers. Gasolene and oil consumption will be recorded. The run will start at 8 o'clock in the morning and from 10 to 13 miles an hour will be maintained all day. It is estimated that the test will be concluded in about ten hours.

If stops are made for lunch or any other purpose the motor is to be kept running. At the close of the run the dealer and his observers will forward an affidavit to the Franklin company, telling the results and giving road conditions, temperature and fuel and oil consumption.

As a part of its dealer cooperation in this plan the Franklin company has issued a 15-page booklet, 6 x 9 inches, describing the test, telling its object, giving rules, instructions and advice and advising the dealer how best to take advantage of the publicity resulting.

He is advised to carry a banner on his car for a week prior to the run, and even the most suitable wording is given. There is also copy for three newspaper ads, one to be used immediately, one a few days before the run, and one after the run. It is a well worked out plan and leaves little for the dealer to worry about. The Franklin company is taking care of advertising in all national publications. It is stated by the Franklin engineers that 100 miles on low gear is equal to 336 miles on high gear.

Division for Studebaker Delivery Cars.

In accordance with its general policy of intensive market cultivation the Studebaker Corp., Detroit, Mich., has established a special division of its sales department to promote the sale of light delivery cars. This division has been placed in charge of Charles Van Horne.

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PROMINENT MEN IN TRADE WHO ASSUME NEW DUTIES

Resignations and Promotions That Serve to Place Many Workers in New Places—Few of Them Leave the Industry.

T. C. Woodin, formerly Eastern sales manager for the Abbott Motor Co., has been appointed manager of the Abbott company's Detroit branch.

R. P. Dowes has resigned as sales representative of the Goodyear Tire & Rubber Co. in Detroit; he is now with the Kelly-Springfield Tire Co.

Wilbur F. Groom has joined the St. Louis (Mo.) sales force of the H. G. Hurd Co., Buick distributers. Previously he was connected with the B. F. Goodrich Co. in the same city.

R. E. Stevenson has become connected with the McFarlan Motor Co., Connersville, Ind., and will have supervision of sales for the Central District, comprising Indiana, Ohio and Michigan.

B. F. Everitt, who has been identified with the E-M-F, Wayne and Everitt automobile companies, has been made manager of the body building department of the Hayes Mfg. Co., Detroit.

Frank G. Mauthe, formerly manager of the Goodyear Tire & Rubber Co., in Newark, N. J., has become affiliated with the Batavia Rubber Co., Batavia, N. Y., as special representative in New Jersey.

W. H. Godbey, Jr., has been appointed assistant sales manager of the Premier Sales Co. in Memphis, Tenn. Previously he was associated with the Memphis Motor Car Co. and the Ford Motor Co.

William J. Marshall has been appointed general manager for H. Collier Smith, Detroit, manufacturer of special sheet metal machinery. Previously he was president of the Mercury Cyclecar Co., Detroit.

O. B. Henderson has been appointed vice-president of the Pacific Kissel Kar branch, with headquarters at Los Angeles, Cal. Previously he was general manager for Baker Motor Vehicle Co., Cleveland, O.

Ed Swanbrough, veteran driver and motor car salesman, has rejoined the sales force of E. J. Johnson, Colorado distributer for Maxwell and Lozier cars. Latterly he has been traveling for the Overland Automobile Co., Denver, Col.

E. A. Cassidy, previously sales manager, has been appointed general manager of the H. W. Johns-Mansville Co., New York city, to succeed George L. Holmes, resigned. H. H. Knepper, assistant manager of the Detroit branch, has also resigned.

Joseph E. Burns, formerly manager of the Lee Motor Car & Supply Co., New Bedford, Mass., and later factory branch representative for the Jackson Automobile Co. in Boston, has become identified with the Davis Automobile Co., Boston distributers for the Regal cars.

J. B. Eccleston, for many years sales manager of the Oakland Motor Car Co., Pontiac, Mich., has been appointed general sales manager of the Apperson Bros. Automobile Co., Kokomo, Ind. J. H. Newmark has been made advertising manager, H. A. Bauer assistant sales manager, and Joe G. Roberts general traveling representative.

Sales Manager L. J. Ollier has appointed special Studebaker representatives as follows. G. N. Jordon, New England; Edward A. Haybell, South Atlantic; J. M. Opper Central West; L. A. Tilley, Southwest; B. O. Willebrands, Pacific Coast. D. R. Murrell and R. C. Bridge have been promoted to district representatives, with headquarters, respectively, in Norfolk, Va., and Salt Lake City, Utah.

General Motors Increases Production.

During the fiscal year ending July 31, 1914, the General Motors Co. manufactured approximately 58,000 cars, compared with about 55,000 in 1913. It is understood that the balance of net profits for the 1914 fiscal period will run about 40 per cent on the $16,476,000 common stock. This is substantially the same as in the 1913 year. The export business will not suffer greatly as a result of the war. Only 10 per cent of the total sales are foreign and if it were all cut off the net loss would not be a weighty matter.

Sales Manager W. K. Chilcott states that sales made by the G. M. C. Truck Co. the last half of the fiscal year ending July 31, 1914, exceed the preceding year 33 per cent.

Sales for July, 1914, exceeded July, 1913, by 137 per cent. Sales for July, 1914, exceeded June, 1914, the record breaker, 8 per cent. The term sales as as above used does not mean orders received, but actual deliveries.

The number of dealers handling the G. M. C. trucks is 232 per cent greater than on January 4, 1914. With 32 per cent less productive labor and 49 per cent less non-productive labor, the company built 56 per cent more trucks in June, 1914, than in June, 1913.

STUTZ ADDS LIGHT FOUR WHICH SELLS AT $1,450

Has L-Head Motor, 3¾ x 5—Wheelbase is 108 Inches on 32 x 4 Tires —New Four-Passenger Model, Too.

A light four runabout, selling at $1,450, has been announced for 1915 by the Stutz Motor Car Co., Indianapolis, Ind. In addition, another 1915 model, styled "Bull Dog" and comprising a close-coupled four-passenger body on a standard four-cylinder Bearcat roadster, has been added. This car sells for $2,250.

The new light four is standard in every way. It has a four-cylinder L-head block motor, 3.75 by 5 inches, made by the Wisconsin company. A cone clutch and the Stutz gearset and rear axle, combined in one unit, are continued. The wheelbase is 108 inches and 32 by 4-inch tires mounted on wooden wheels are used. The front axle is of Timken make and the springs are semi-elliptic all around. The Remy starting and lighting system has been adopted and mixture is furnished by a Stromberg.

Right steering and right control are used, the steering gear being a Gemmer. The equipment includes Hartford shock absorbers, Warner speedometer, Baker demountable rims, trunk and tire carrier and the body is ironed for a top.

The Bull Dog model is identical with the present Bearcat, with the exception that Bosch ignition is used and the gravity tank has been displaced by a pressure system.

Overland Retail Order For 50 Cars.

The 50 prizes which are to be awarded the leading salesmen in the affiliated companies will be Overland runabouts. The Willys-Overland Co., Toledo, O., has booked the order, which is one of the largest retail sales ever made. The expenditure represents approximately $55,000.

Auto Parts Takes Over Wilson Co.

The Auto Parts Co., Providence, R. I., has bought out the John J. Wilson Co., 1424 Vine street, Philadelphia, Pa., which will hereafter be known as the Wilson Ford Shop, handling Ford specialties.

Packard Quarterly 1¾% Declared.

The Packard Motor Car Co., Detroit, Mich., has declared its regular quarterly dividend of 1¾ per cent on the preferred stock. It is payable Sept. 15th.

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ENTHUSIASM A GOOD THING UP TO A CERTAIN POINT

Over-Zealous Salesmen Invite Suspicion, Says Jenkins — Arguments All Superlatives Apt to Be Unreliable.

There is a point in every sales argument where the soft pedal should be applied, says W. Haddon Jenkins, Jr., in the Hupmobilist.

As a rule, enthusiasm is the most effective element that any salesman can inject into his sales work. Enthusiasm is contagious. It lifts the prospect completely off his feet and carries him along with a sustained interest to the end of the solicitation. Enthusiasm begets confidence also, in the prospect's mind, because he recognizes the whole-souled conviction of quality which the salesman is attempting to express.

Therefore, enthusiasm is a splendid thing—up to a certain point.

Every salesman should bear in mind, however, that there are two distinct periods to every sales transaction. There is the first period where the salesman is selling his prospect; and period number two develops when the prospect begins to sell or unsell himself.

The prospect is always in an antagonistic frame of mind. He realizes that the salesman is bending every effort toward the ultimate end of exchanging his product for a sizable amount of money which the prospect must withdraw from his pocket, bank balance, old blue cotton sock, or whatever depository he may have selected. The prospect is naturally opposed to this operation—he hates to give up good, hard-earned lucre—no matter how enticing the exchange may appear. Therefore, while he may claim that he is absolutely "openminded" and unprejudiced, he is nevertheless waiting for the first opportunity when he can reasonably satisfy himself that the deal isn't so attractive after all.

Over-zealous salesmen invite suspicion because the argument that is all superlatives is apt to be unreliable. When any man claims that his car is the best in every department of "motorology," the prospect begins to have a reasonable doubt as to whether the salesman is not going a few leaps too far and claiming more than he can prove. Once permit a strain of suspicion to circulate in a man's think-tank, and he begins to figure how he can best get on to the sidewalk with his bank roll intact.

Therefore it is good policy to flavor enthusiasm with a little old-fashioned restraint. Don't compromise on one single virtue of the motor car—make every point that is an actual sales argument—but don't try to cover every single record endurance run, economy test and "round the world" tour in a single solicitation. As a matter of fact, there are just about six Hupmobile characteristics which—if well developed—should sell any man who is in the market for a good car around the Hup price.

There is not the slightest necessity for "dreaming" any superfluous Hupmobile virtues. Built squarely into the car and Hupmobile reputation, you will find selling points that are more efficient than any fiction that imagination might conjure up. These are the arguments that you should use in a forceful, convincing way.

Note that our phrase, "We believe the Hupmobile to be the best car of its class in the world," is a tremendously sweeping statement—yet by no means a hysterical claim savoring of immodesty or sensationalism.

There is a big distinction between the out-and-out braggadocio, "The Hupmobile is the best car of its class in the world," and the confident, assured personal belief that the Hup is the best in its class.

Birmingham Branch For Haynes.

The Haynes Automobile Co., Kokomo, Ind., has opened a branch in Birmingham, Ala., at 400 South 21st street. It is in charge of Charles W. Tway and D. B. Williams, the latter as assistant manager. From this branch all the business in the states south of the Ohio river and the West Indies is now being controlled. Here will be the headquarters of the traveling men and service mechanics for the entire territory controlled by the branch. Mr. Tway has started on a business trip throughout the different states of the South, calling on Haynes dealers and representatives. Later he will go to the West Indies to establish new agencies.

Auto Wheel Officers Reelected.

At the annual meeting of the stockholders of the Auto Wheel Co., Lansing, Mich., all of the officers were reelected. These include E. S. Porter, president; H. E. Bradner, vice-president; D. L. Porter, secretary-treasurer. In addition to E. S. Porter and Bradner, the board of directors is as follows: Lawrence Price, J. C. Watzel, Elgin Mifflin, Harry P. Woodworth and Henry J. Campbell.

MUTUAL ASSOCIATION OF WESTERN CHALMERS MEN

New Body, to Foster Cooperation Among Chalmers Workers, Has Membership of 150—Meets Twice a Week.

The entire force of the Western Motor Car Co., San Francisco, Cal., distributer for Chalmers cars, has been organized into a mutual association having a membership of over 150 employes. In speaking about the matter President E. C. Anthony of the Western company said:

"The sole object of this mutual association is to bring all the Chalmers workers of this territory together and make it possible for all to get from each other the assistance and cooperation which is needed to succeed in any business.

"We will hold a meeting twice a week, at which all matters interesting this company will be discussed, suggestions made, and, last but not least, at which we will try and have a successful business man relate the story of the reason why he succeeded. I believe that such talks by men that have climbed the latter of success will do more to inspire ambition, desire to 'also get there,' than lectures or talks by other men. In a general way, we are going to do here just what they do at the plant, only on a smaller scale—that is, to promote by every means the furtherance of Chalmers business and the welfare of the Chalmers local organization."

Pope Claims of $1,641,382 Approved.

Claims aggregating $1,641,382 against the Pope Mfg. Co. have been approved by the receivers, according to the first report filed in the United States District Court, Boston Mass. This does not include a claim for $1,000,000 filed by the Empire Trust Co. of New York as trustee for the noteholders, which the receivers have approved for only $5,000. The total assets on June 30 last were valued by the receivers at $1,562,895. Accounts payable on that date aggregated $60,595.

Since their formal appointment last November the receivers have sold 21,062 motorcycles and 40,602 bicycles up to June 30 last. They recommend the sale of the plant at Westfield, Mass., at public auction and as soon as an upset price can be fixed they will apply to the court for permission to sell.

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KRIT ADDS LOWER PRICED MODEL SELLING FOR $850

Has Complete Electric Lighting and Starting System — Block Cast Motor Measures 3¼ x 4 Inches.

To meet the demand for a lower priced car, the Krit Motor Car Co., Detroit, will bring out another model to sell at $850 with electric cranking and lighting.

This new Krit, designated as model O, has the same motor and chassis as the models selling at $995, but it is less of a de luxe proposition, though it is just as good from the standpoint of service. The motor has a bore of 3¼ inches and a stroke of 4 inches, and is an L-head type with block cylinders.

Though the body is a streamline type, it is not so refined; it has the familiar paneled edges which are absent on the other car and is a strictly manufactured proposition.

To illustrate the equipment differences making possible this lowering in price as compared with the other Krit, the top is not of the one-man type, though it is of a good grade of mohair; there is no gasolene tank gauge; the fenders are not crowned, though preserving the popular curve. The Bosch magneto is not fitted, the new Disco combination electrical system taking care of ignition as well as lighting and cranking. A Schebler carburetter will probably be used.

Though not so refined as its running mate, it is pointed out that this model O Krit is very good value, for it possesses many high priced car features. For instance, there is the coped over radiator, tapered bonnet, left drive, rain-vision and ventilating windshield, leather covered instrument board, Stewart speedometer, demountable rims, and tire carrier at the rear with the gas tank in the cowl.

It is probable that a large proportion of the Krit factory will be devoted to the making of this model, a schedule of about 6,000 of them being figured on. Due to the low price, this car is to be had only in stock form. No changes will be made in color, equipment or fittings. Both roadster and touring car are offered at $850. Deliveries are under way, the first carload going forward today.

Splitdorf Charges Patent Infringement.

The Splitdorf Electrical Co. has brought suit against the Eisemann Magneto Co., charging infringement of patent No. 1,102,385, covering improvements in a magneto mounting. The Splitdorf company is the assignee of Ernest W. Brackett, Newark, N. J., and claims that the Eisemann company made or sold or caused to be made or sold in the borough of Manhattan, magneto mountings embodying the invention of the patent. The plaintiff prays for a writ of injunction, as well provisional as permanent, and also for damages and costs of the suit. The Eisemann Magneto Co. claims that the so-called invention described in the patent was manufactured and marketed by others for some years before the granting of the patent in suit. The Eisemann company will contest the suit on this ground.

CHALMERS LOPS $200 FROM PRICE OF ITS LIGHT SIX

The Chalmers Motor Car Co., Detroit, Mich., has reduced the price of its small six-cylinder model from $1,850 to $1,650. This cut of $200 means a sheer reduction of this amount, the car at its new price being identical in every respect as heretofore. This price reduction brings this small six into the price zone of small sixes the public has been observing closely for months past.

Coming Events

* Indicates sanction by A. A. A.

Sept. 4, Des Moines, Ia.—Track meet, Iowa State Board of Agriculture.*

Sept. 2-7, Hartford, Conn.—Automobile show, Connecticut Fair Association.

Sept. 5 or 6, Pittsburgh, Pa.—Track meet under auspices of E. A. Moross.

Sept. 6-7, Detroit, Mich.—Track meet under auspices of J. A. Sloan.*

Sept. 6, 7, 8, Newark, N. J.—Cyclecar Reliability Tour to Atlantic City.

Sept. 5, 7, Brighton Beach, N. Y.—Track meet, New York Motor Dealers' Contest Association.

Sept. 7, Corona, Cal.—Road race, Corona Auto Association.

Sept. 7, Providence, R. I.—Track Racemeet under the auspices of F. E. Perkins.

Sept. 7, 8, 9, Milwaukee, Wis.—Economy Reliability run.

Sept. 7-14, Indianapolis, Ind.—Automobile show, Indianapolis Automobile Trade Association.

Sept. 9-11, Cleveland, O.—Convention Paving Brick Manufacturers' Association.

Sept. 10-15, Portsmouth, Eng.—Autumn Conference, Institute of Metals.

Sept. 11-12, Peoria, Ill.—Track meet National Implement & Vehicle Show.

Sept. 12, Hamline, Minn.—Minnesota State Agricultural Society's track racemeet.*

Sept. 14, Milwaukee, Wis.—Track racemeet under the auspices of the State Board of Agriculture.

CHICAGO AMATEURS BEAT TRADE MEMBERS IN TOUR

Motor Club Teams of Six Cars Each Contest for Banta Trophy—Dealers Get Worst of Contest by 70 Points.

The fourth annual team match between amateur and trade members of the Chicago Motor Club for the A. J. Banta trophy took place Friday and Saturday of last week, and resulted in a victory for the amateur team by a score of 181 for the victors and 251 for the losers. The trip was to St. Joe, Mich., and return, a journey of about 210 miles. The amateur team was made up of six cars, while the trade team had the same.

On the winning side, L. H. Phifer, in a Velie, O. W. Hahn in an Overland and E. Turner in a Mercer made perfect scores. Captain J. Frank Meyer, in a Ford, drew 178 points, while L. M. Barr, in a Peugeot, was docked 1.

On the losing side the clean scores were made by R. C. Cook in a Stearns-Knight and John D. O'Connor in a Buick. John A. Bell in a White and P. E. Sparks in an Oakland each drew 1 point.

Change in Iowa Hupmobile Dealer.

The Central Iowa Motors Co., Des Moines, Ia., distributers of the Hupmobile, has been purchased by Walter S. Adams, Frank E. Card and H. R. Brown. Adams and Card have handled several well-known makes of cars in the northern part of Iowa for several years and Brown, through his former connection with the Thomas B. Jeffery Co. as Western Division sales manager, and later with the Mitchell-Lewis Co., of Racine, Wis., as western representative, is well known.

More Territory For Hupmobile Dealer.

Charles E. Reiss & Co., New York Hupmobile distributer, will open a branch in Newark, N. J., at 373 Central avenue, where an up-to-date service station will be maintained.

Stroke of Briscoe Motor 5⅛ Inches.

Because of a typographical error, the stroke of the Briscoe motor was given last week in a caption beneath an illustration as being 5¼ inches; in the description, however, the correct stroke, which is 5⅛ inches, was given. The manifold construction, instead of being integral, is bolted in place.

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Checking the Salesman

"WITHIN THREE MONTHS ONE SALESMAN CALLED UPON ME IN HIS ENDEAVOR TO SELL FOUR DIFFERENT MAKES OF CARS."

This, from a business man in our second largest city, suggests the evil of the shiftless salesman, which is a problem that dealers in some cities are already endeavoring to solve.

The most serious aspect of this problem is the impression that such a salesman creates on the prospect. Here is a salesman occupying four different jobs within three months.

Here is how one prospect actually analyzed the situation and here are a few of the reasons why this prospect did not purchase a car from such a salesman.

Contradictory Sales Talk

First: Mr. Prospect reasoned that the word of a salesman changing his job so frequently could not be depended upon. Each visit he talked the merits of as many different cars.

To Mr. Prospect it was impossible for a cone clutch to be the only one today and to be a failure tomorrow. The same was true with many other features of the car. With him that salesman was a failure, a quantity not to be depended upon.

But Mr. Prospect went further. Here is the question he asked himself: "WHAT KIND OF A BUSINESS HOUSE IS IT THAT PICKS UP A SALESMAN WHO GOES FROM ONE PLACE TO ANOTHER EVERY MONTH OR SO? ARE THE BUSINESES METHODS OF SUCH A HOUSE TO BE DEPENDED UPON? DO I CARE TO BUY A CAR FROM SUCH A CONCERN? CAN I DEPEND UPON SUCH A CONCERN TO GIVE ME LEGITIMATE SERVICE AFTER I HAVE PURCHASED ONE OF THEIR MACHINES? CAN THE WORD OF SUCH A CONCERN BE DEPENDED UPON IN RESPECT TO CAR GUARANTEE?"

And Mr. Prospect asked many more questions, and finally decided not to purchase any of the four different makes of cars sold by the shift-around salesman. All confidence in the salesman, in the dealer, and quite a lot in the car was shattered. And why? Because the salesman could not be depended upon.

Hope In Employment Bureau

This damaging situation in not a few cities is leading to the establishment of employment bureaus, maintained by dealers or their trade associations, where they keep the record of all salesmen and other employes. If there is any question about a salesman the dealer tells him that he engages all of his help through the employment bureau, where the charge is nominal, scarcely a dollar. Such an employment bureau soon brings the fly-by-night salesman to the attention of the dealer. His measure is taken.

For their own protection dealers should look carefully into this salesman question. It is a serious one. True, but a small percentage of salesmen are of the calibre outlined, but the errors that can follow in the wake of such a person are too serious to be overlooked. The dealer cannot afford to have his reputation impaired by such persons.

The Chaffeur's Record

A few dealers in high-priced cars have found the value of keeping a card index record of all chauffeurs whom they have placed on their customers' cars; in fact, they go further, and keep a record of all chauffeurs on all cars of their make sold by them. These records are revised from time to time and kept up-to-date. The record shows the length of service at different places, number of accidents the chauffeur has figured in, the number of arrests he has been charged with, the number of heavy repair bills he has been responsible for. In short, each card is a faithful record of each chauffeur.

Such records have an immense cumulative value. This value does not exhibit itself in one year; it shows little value in two years, but after four or five or perhaps eight years have passed, its cumulative value is apparent. It is a wonderful asset to the dealer. The record explains many troubles that may arise with a car. The record explains the high cost of maintenance with one owner as compared with another. The record makes it possible for the dealer quickly to place his finger on the root of the troubles that he may be having with his customers.

If you sell high-priced cars it will pay you to begin a card index on the chauffeurs on them whether you placed the men in these positions or not.

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NEW CONTINENTAL MOTOR SMALLEST OF ITS LINE

Bore and Stroke 2¾ x 4 and Construction on Modern Lines—Block Cylinders Cast With Upper Part of Crankcase.

Influenced by the increasing market for motors suitable for very light cars, the Continental Motor Mfg. Co., Detroit, Mich., has added to its line the compact little motor shown in the accompanying illustration. This latest and smallest Continental will be furnished in the unit power plant type only, and is so designed that it may be used in connection with standard makes of clutch and gearset units, in accordance with the usual Continental practice.

Cylinders and upper crankcase are cast integral; a removable head covers all the cylinders and carries the water outlet, which is conspicuously large. With a bore and stroke of 2¾ x 4, the motor has an S. A. E. rating of 12.1 horsepower. The weight is approximately 210 pounds without gearset or clutch.

The lower part of the crankcase carries the oil reservoir and the starting crank assembly complete. The crankshaft runs in three bearings, all of which are 1½ inches in diameter. All the valves are on the left side and the stems are enclosed in a pocket running the full length of the motor casting and covered by a pressed steel cover held in place by three nuts.

Integral construction is adopted for the intake manifold, the carburetter bolting directly to the motor casting; the exhaust manifold, which is ribbed longitudinally, is a separate casting bolted in place. Cooling is by thermo-syphonic action; the jackets extend the full length of the cylinder bores, giving the maximum cooling effect.

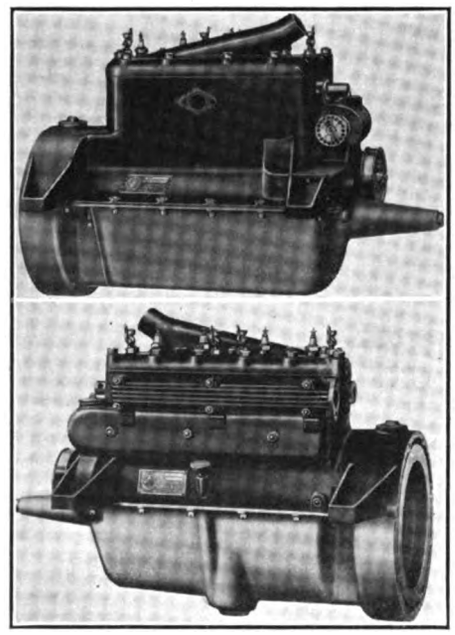
The magneto which furnishes the ignition current is bolted to a bracket at the front end of the motor with its shaft crosswise, and is driven by a cross shaft turned by spiral gears. This arrangement, together with the general design of the motor, leaves both sides clear of everything but the carburetter, which, having no exterior manifold, occupies but little space. Lubrication is effected by a combination of force feed and splash that has been used for several years by the Continental company.

The four arms which support the motor are cast integral with the upper half of the crankcase, affording maximum strength. A deep box form is used to give the requisite stiffness.

Samples of the new motor, which is designated as Model U, will be ready for distribution in November and December, while quantity production is planned to begin about the first of the year.

Big Total For Stanweld Rim Contracts.

Rim contracts secured thus far this season by the Standard Welding Co., Cleveland, O., indicate that more than 150,000 motor cars bearing 1915 name plates will be equipped with Stanweld detachable or demountable rims. This quantity does not include the plain clincher type rims, of which the Standard company produces approximately 1,500,000 a year. Among the prominent companies whose cars will be Stanweld equipped are the following. Anderson Electric Car Co., Chalmers Motor Co., Chevrolet Motor Co., Mitchell-Lewis Motor Co., Motor Car Mfg. Co., F. B. Stearns Co., Peerless Motor Car Co., Dodge Bros., S. G. V. Co., L. P. C. Motor Co., Hudson Motor Car Co., Moon Motor Car Co., Rauch & Lang Carriage Co., Regal Motor Car Co., Reo Motor Car Co. and Westcott Motor Car Co.



Latest and smallest Continental motor has long stroke, thermo-syphon cooling, high-tension magneto ignition and is of the unit power plant type

Minneapolis Convention Sept. 10 and 11.

There probably will be several hundred retail motor car dealers and garage owners in Minneapolis, Minn., September 10 and 11, when the first convention of the Retail Automobile Dealers' Association of the Northwest will take place. The two-days affair will be a composite of pleasure and business, it being the object of the convention to be a gobetween for the retail and wholesale trade. The association was organized for the purpose of promoting cooperation between retail dealers and garage men on the one hand, and the wholesale accessory and supply houses, distributers and manufacturers on the other hand. The officers of the association are C. W. Jewett, Bemidji, Minn., president; G. A. Lewis, Mankato, vice-president; P. C. Frazee, Pelican Rapids, secretary-treasurer. The Minneapolis representative is Alban Bodine.

INCREASE OF 73 PER CENT MADE BY NEWARK DEALERS

(Continued from page 5.)

The Oldsmobile Co. of New Jersey has increased its sales 25 per cent; its 1915 allotment includes 250 of the new small four-cylinder Oldsmobile, which has just been brought out, and 40 of the larger cars.

The Ellis Motor Car Co., Pierce-Arrow dealer, did a remarkable business for 1914 up to date, totaling nearly $1,000,000. the used-car business alone amounted to $185,000. Sales for the new series model are 50 per cent ahead of last year for the same period. The business in Pierce-Arrow commercial vehicles is approximately 50 per cent larger than in the preceding year; 30 per cent of the Ellis company's business in passenger vehicles is for closed cars.

The Fitzgerald Motor Co., which handles Overland cars, reports that it is three days behind in its orders. Starting February 1, sales during the first five months of this year have equaled the 12 preceding months. The sales for 1914 are approximately 100 cars.

The Greene Motor Car Co., Locomobile dealer, reports that its business is approximately the same as for last year.

The North Jersey Motor Vehicle Co. sold 47 National cars to date, as compared with 30 cars for 1913. This represents an increase of about 34 per cent.

The Whiting Motor Co., which handles Mercer and Chandler cars, has sold 44 cars in 1914 as against 29 in 1913, the increase being about 54 per cent.

Federal Not General Adds Many Men.

Due to an error in telegraphic transmission, it was stated in last week's issue that the General Motors Truck Co. had made a number of additions to its organization. This should have been the Federal Motor Truck Co.

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Established Grade B Subdealers to Give Distant Owners Service

Chalmers Man Tells Dealers' Convention How Difficult Problem Was Met on the Coast—Kept Old Business and Brought in New Business—Future Plans.

How to give service to the owner who lives distant from the dealer and in a town where there is no subdealer was a problem which confronted the Western Motor Car Co., Chalmers distributer in California and Nevada; E. N. Sells, San Francisco, representing this company, explained at the recent Chalmers dealers' convention the plan which was adopted.

The scheme involved the creation of a Class B grade of subdealer, whose principal mission was to render service to cars sold in his territory.

Territory Not Properly Worked.

"We found that our territory was not worked properly—that in one spot we were doing considerable business and in another we did not get nearly enough," says Sells in the Chalmers house organ.

"We discovered there were two reasons for this. One was that our salesmen were not covering certain districts. The other was that we could not give certain owners, particularly in the country, the service to which they were entitled. If we sold a car to a man who lived ten miles from the home garage, and he had trouble, we had to send a man out to see him two or three times and that was expensive. If we didn't he was under the necessity of driving in that ten miles and the result was considerable dissatisfaction.

Put Service Nearer the Owner.

"The solution was to put the service as nearly next door to the car owner as was possible. The closer the service was to the owner, the less service was required and the less expensive it was. This meant that we must establish some way of insuring permanent service to every Chalmers owner in the territory.

"So we decided to line up the best garage in every small community by means of what we called a Class B or Service Contract. Class A subdealers, you understand, are regular subdealers with exclusive territory. Class D dealers are a new type.

"Now, this Class B Service Contract provides that, for every new car sold by the distributer in the town covered by the contract, or the service representative, the Class B subdealer is to receive, in monthly installments of $10, the sum of $100, for which he has agreed to give ten months' service on the car. When the car is delivered to the owner, the service representative receives a book containing ten coupons, numbered and dated for ten consecutive months. One of these the owner signs each month, proving he has received satisfactory service. When this has been mailed to our office we send the representative $10. If he doesn't prove by the slip that satisfactory service has been given, he doesn't get the money. And we find that, invariably, he does give good service.

Signed Statement Invaluable.

"Then, too, the owner's signed statement to the effect that he has received proper service effectually stops any complaint that may come up later. Sometimes a man declares that his trouble would not have occurred if it had been attended to six months ago. We have his signed certificate instead to the effect that he has received full service.

"So successful has this service arrangement proved that we have extended it to our eleven Class A or regular subdealers. When a car is sold by one of these, $100 is held out of his commission and paid in monthly installments of $10 upon receipt of the coupons signed by the customer. I might add that these Class A subdealers have exclusive territory and no Class B subdealers are established in that territory.

Gets Commission on His Sales.

"The Class B Service Contract also stipulates that in case the service representative sells a car unassisted he shall receive a selling commission in addition to the $100 for service.

"This commission is 7½ per cent, but if we have to send a salesman and a demonstrator to close the deal, the actual expense is deducted from the 7½ per cent commission.

"Last month, in three different towns so small that we had never previously been able to get agents there, these service stations made sales involving used cars and took the used cars in consideration of our allowing them the full commission. As a result, we avoided taking the used cars into stock; the deal was for cash and absolutely clear, and the owner was fully protected on service.

"We have come to a point now where we will not sell a car without protecting the owner in the matter of service. If he comes from an outlying district where there is no service we will not take his money and then proceed to forget him. If we cannot establish a service station close enough to meet his requirements, we refuse his order.

Gets Results in Ten Days.

"We began establishing these service stations about 45 days ago and already 100 are in operation. When we get through, we will have between 150 and 175. Already we have traced directly to these service stations the sale of six 'Light Sixes.' Immediate results can be expected within ten days after installation.

"Of course it is necessary to keep the interest up. Each month we send out a circular letter emphasizing the opportunity to make the additional commission and telling how many of the other stations have made sales. Our traveling men go over the territory frequently and keep the service representatives gingered up.

"On the other hand, the service representative is of great assistance to the traveling men and to our office. Because he is right on the ground he can tell us just what local conditions are, who wants a car, when to see the prospect and how to approach him.

Puts Sign on Each Service Station.

"The service station will cut our country selling expense in two.

"In order to make the service station more valuable we have prepared at our own expense a standard sign about eight feet long with the words 'Chalmers Sales and Service Station.' This sign is swung out over the sidewalk.

"We hope in three years to have Chalmers sales and service stations in every town that has over 100 people in it, where tourists, as they pass back and forth can find competent mechanics to take care of Chalmers cars, and give them information of any kind they may need."

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USED CAR VALUES SET BY CENTRAL MARKET REPORT

(Continued from page 6.)

is" means what these models have actually been sold for after being taken in trades. This figure does not mean what one car has sold for, but it is the average of perhaps what a dozen used cars of this particular model have sold for.

After the "As is" column is another headed "Partial overhaul," in which are given the figures these cars have actually sold for after being taken in trade and then partially overhauled.

Then follows another column, headed "Rebuilt," which indicates what these cars have actually brought after the dealer has rebuilt them. These figures are, of course, much higher than those in the two preceding columns, in that the rebuilt used car should bring much more than the partially rebuilt one or the car that is sold just as it is taken in in the trade deal.

We now come to the last column in Fig. 2, headed "Appraised value." By "Appraised value" is meant a value placed on the car by all of the dealers in Chicago selling other makes of cars listing in the same zone as the Packard. Thus this appraised value would be arrived at by such dealers as Pierce, Locomobile, Peerless, White, Winton and some others. Generally this appraised value comes very close to the actual prices that used cars have brought, it being quite common for the appraised value not to be more than $50 or $75 under the actual selling value of these cars.

Fig. 1 is another sample page from the first issue of the Used-Car Central Market Report. At the top appears only a portion of the Chalmers line, the earlier models being on a preceding page. The prices for Model 10, 1912, show how close the "As is" selling value is to the "Appraised value." This model was actually sold for $680 and the group of Chicago dealers selling other cars in this class had appraised this model at $700, but $20 higher than it had actually brought during the first three months of this year.

Down further in this Chalmers group is Model 17, 1913 roadster, with an allowance by the Chalmers dealer of $900, an actual sale or "As is" value of $850 and an appraised value by rival dealers of $800. These three figures give proof positive of the value of this Used-Car Central Market Report to the dealer, no matter where he resides. The report is a real guide, not a guess work or approximation.

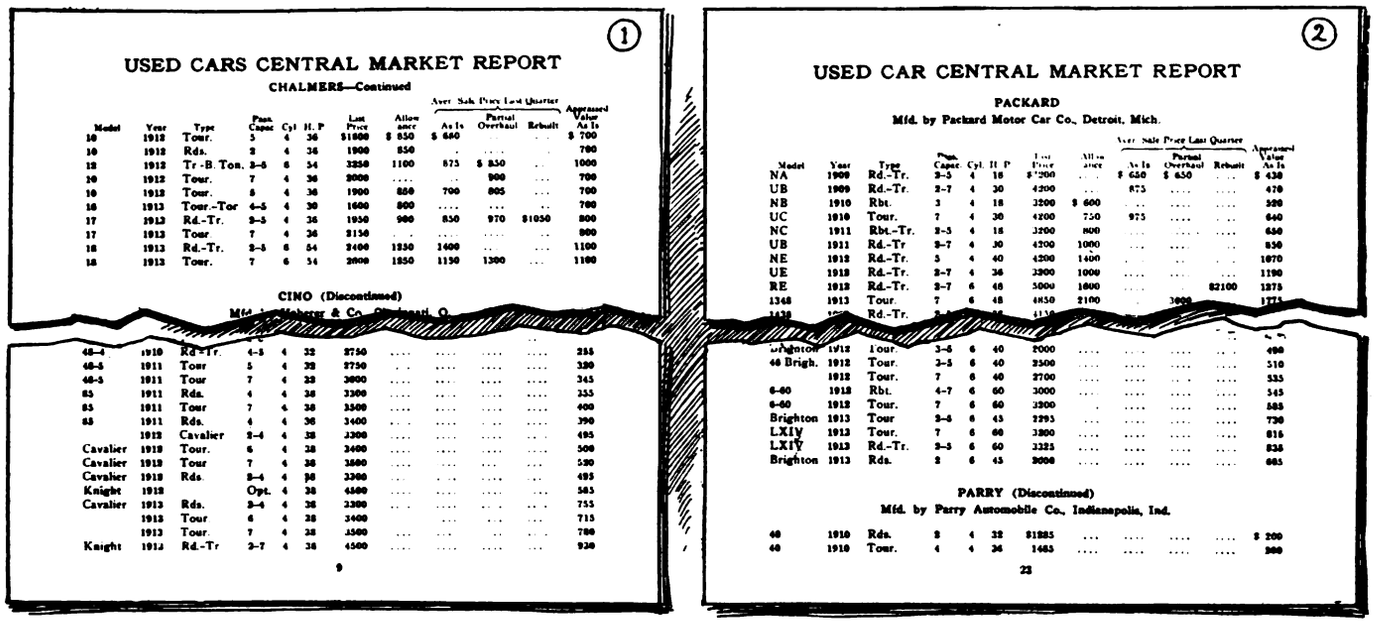
How were the figures for these market reports obtained and from whom?

They were all obtained from Chicago dealers. Fig. 4 shows the blank form that each member of the Chicago Automobile Trade Association is provided with. This slip was actually made out by a dealer; no one knows who; it may have been the Chalmers dealer, or it may have been Cadillac., Cole, or any other dealer that took this Model E, 1909 Chalmers in trade on a new car. After taking it in the Chalmers was actually sold for $400. The dealer who made this sale furnished the information to the dealers' association, but he did not have to sign his name to the blank form; in fact, there is nothing to indicate from whom it was received.

The form is mailed to the dealers' association in a double envelope. It is first placed in a plain white envelope and sealed. This envelope, without address or any distinguishing mark, is placed in an envelope furnished by the dealers' association, and on this outer envelope is a number which the trade association has assigned to the dealer. Each dealer has a different number, and one dealer does not know the number of the other. The confidential secretary of the association is the only one who knows the numbers of the various dealers and the only reason that the envelopes are numbered is that he will know what dealers have been assisting in furnishing the information.

These information blanks or sales slips are the real secret of the system. Before this scheme was evolved it was impossible for the dealers to get together. One mistrusted the other. One refused to tell the other what he allowed on a certain used car and what he actually sold it for. But with this secret sales slip scheme many dealers were at once sold to the proposition. They saw that although giving out the information they were yet keeping their business secrets and not laying open their books to any rival dealer or to any association.

The first volume of the Used-Car Central Market Report came from the printer August 5. It contains the information from 753 slips such as shown



① USED CARS CENTRAL MARKET REPORT

CHALMERS—Continued

Model	Year	Type	Pass. Capac.	Cyl.	H. P.	List Price	Allowance	Aver. Sale Price Last Quarter: As Is	Partial Overhaul	Rebuilt	Appraised Value As Is
10	1912	Tour.	5	4	36	$1800	$ 850	$ 680	....	....	$ 700
10	1912	Rds.	2	4	36	1900	850	....	....	....	700
12	1912	Tr.-B. Ton.	3-5	6	54	3250	1100	875	$ 850	....	1000
20	1912	Tour.	7	4	36	2000	....	....	900	....	700
10	1913	Tour.	5	4	36	1900	850	700	805	....	700
16	1913	Tour.-Tor	4-5	4	30	1600	800	....	....	....	700
17	1913	Rd.-Tr.	2-5	4	36	1950	900	850	970	$1050	800
17	1913	Tour.	7	4	36	2150	....	....	....	....	800
18	1913	Rd.-Tr.	2-5	6	54	2400	1250	1400	....	....	1100
18	1913	Tour.	7	6	54	2600	1350	1150	1300	....	1100

CINO (Discontinued)

Mfd. by Kellogg & Co., Cincinnati, O.

48-4	1910	Rd.-Tr.	4-5	4	32	$750	....	....	....	....	285
48-5	1911	Tour.	5	4	32	2750	....	....	....	....	320
48-5	1911	Tour.	7	4	32	3000	....	....	....	....	345
65	1911	Rds.	4	4	36	3200	....	....	....	....	355
65	1911	Tour.	7	4	36	3500	....	....	....	....	400
65	1911	Rds.	4	4	36	3400	....	....	....	....	390
	1912	Cavalier	2-4	4	38	3200	....	....	....	....	495
Cavalier	1912	Tour.	6	4	38	3400	....	....	....	....	500
Cavalier	1912	Tour	7	4	38	3600	....	....	....	....	520
Cavalier	1912	Rds.	2-4	4	38	3200	....	....	....	....	495
Knight	1912		Opt.	4	38	4500	....	....	....	....	585
Cavalier	1913	Rds.	2-4	4	38	3200	....	....	....	....	755
	1913	Tour.	6	4	38	3400	....	....	....	....	715
	1913	Tour.	7	4	38	3500	....	....	....	....	700
Knight	1914	Rd.-Tr.	2-7	4	38	4500	....	....	....	....	930

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② USED CAR CENTRAL MARKET REPORT

PACKARD

Mfd. by Packard Motor Car Co., Detroit, Mich.

Model	Year	Type	Pass. Capac.	Cyl.	H. P.	List Price	Allowance	Aver. Sale Price Last Quarter: As Is	Partial Overhaul	Rebuilt	Appraised Value As Is
NA	1909	Rd.-Tr.	2-5	4	18	$2500	....	$ 650	$ 650	....	$ 450
UB	1909	Rd.-Tr.	2-7	4	30	4200	....	875	....	....	470
NB	1910	Rbt.	3	4	18	3200	$ 600	....	....	....	500
UC	1910	Tour.	7	4	30	4200	750	975	....	....	660
NC	1911	Rbt.-Tr.	3-5	4	18	3200	800	....	....	....	650
UB	1911	Rd.-Tr	2-7	4	30	4200	1000	....	....	....	850
NE	1912	Rd.-Tr.	5	4	40	4200	1400	....	....	....	1070
UE	1912	Rd.-Tr.	2-7	4	36	3900	1000	....	....	....	1190
RE	1912	Rd.-Tr.	2-7	6	48	5000	1600	....	....	$2100	1375
1348	1913	Tour	7	6	48	4850	2100	....	3000	....	1775
1438	[illegible]	Rd.-Tr.	[illegible]			[illegible]					
[illegible]											
Brighton	1912	Tour.	3-5	6	40	2000	....	....	....	....	490
46 Brigh.	1912	Tour.	2-5	6	40	2300	....	....	....	....	510
	1912	Tour.	7	6	40	2700	....	....	....	....	535
6-60	1912	Rbt.	4-7	6	60	3000	....	....	....	....	545
6-60	1912	Tour.	7	6	60	3300	....	....	....	....	585
Brighton	1913	Tour	2-5	6	45	2295	....	....	....	....	730
LXIV	1913	Tour.	7	6	60	3800	....	....	....	....	815
LXIV	1913	Rd.-Tr.	2-5	6	60	3325	....	....	....	....	835
Brighton	1913	Rds.	2	6	45	2000	....	....	....	....	665

PARRY (Discontinued)

Mfd. by Parry Automobile Co., Indianapolis, Ind.

40	1910	Rds.	2	4	32	$1285	....	....	....	....	$ 200
40	1910	Tour.	4	4	36	1485	....	....	....	....	300

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Fig. 1—This shows a part of the listing of Chalmers cars; following a description of the model there are columns for list price, the amount actually allowed in trade by dealers, the average sale price in the last quarter based on actual sales and the appraised value. Fig. 2—This shows part of the Packard and Palmer-Singer listings

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in Fig. 4. Each member of the Chicago Automobile Trade Association has received a copy of this first report.

This first volume is not being restricted to members of the Chicago dealers' association, but already has been sold to dealers in New York, Philadelphia, Boston, Rochester, Buffalo, Detroit, Columbus, New Orleans, St. Louis, Minneapolis, St. Paul, Denver and San Francisco. The Chicago organization is selling a year's service of these market reports for $24. For this amount you get four volumes of the report, one every three months. The next volume will go to press on September 5. It will be larger than the first one and its information will be based solely on sales made during April, May and June. Already over 630 sales slips have been received and it is yet two weeks before the date of closing.

When the dealer buys this market service he does not buy the books or reports, but is only loaned them. He keeps Volume I until Volume II is published and reaches him, at which time he returns Volume I. So on with succeeding volumes, a plan similar to the distribution of telephone directories.

In compiling this Used-Car Central Market Report the Chicago Automobile Trade Association divided the entire motor car field into four grand divisions, as follows:

Division 1—Electric automobiles.

Division 2—Gasolene machines listing at $1,500 and under.

Division 3—Gasolene machines listing from $1,501 to $3,000.

Division 4—Gasolene machines listing at $3,000 and over.

Each division is headed by a chairman and a vice-chairman and in addition to these the membership of the division is every dealer selling cars listing in this price zone. These dealers as a committee meet and settle the "Appraised value." They also pass on the "As is" sales and the other departments of the work. The committee or division meets perhaps three or four times a quarter. So all four of the divisions work and pass on the market reports for each quarter.

President Allison of the Chicago trade association, in speaking of the possibilities of this used-car market report, said:

"This establishes every claim that was made in the Chicago Automobile Trade Association when its membership selected committees of appraisement, and emphasizes the value of Chicago as a great bourse in which standardization of used-car values has progressed to a practical point not only for the members of our association but for dealers in every city in the country, where the clearing house methods of establishing proper appraisements of used cars is not readily applied.

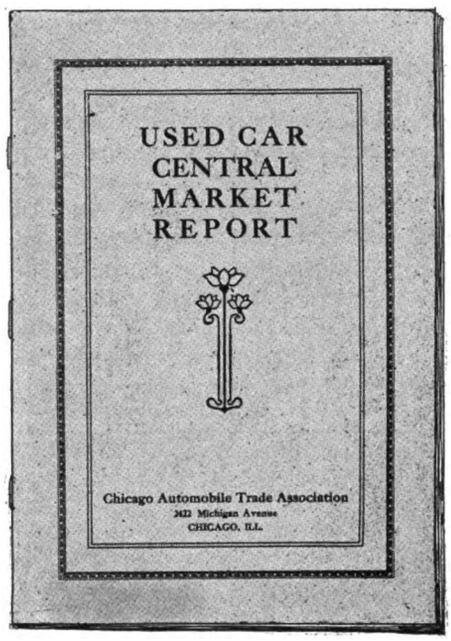
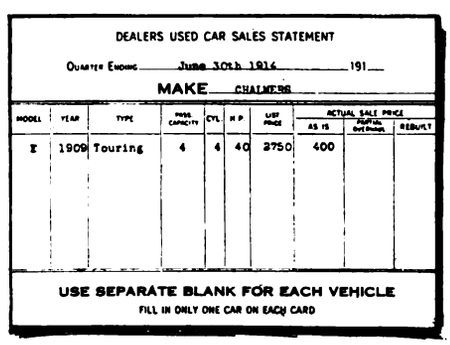


Fig. 3—The report is bound in paper and measures 7 x 10 inches; there are 36 pages

"If this great city volume of business in used cars does not make for a central market quotation every bit as reliable as the quotations from a stock exchange or board of trade, then all the laws of supply and demand and market conditions fail to operate.



DEALERS USED CAR SALES STATEMENT

QUARTER ENDING June 30th 1914

MAKE CHALMERS

MODEL	YEAR	TYPE	PASS. CAPACITY	CYL.	H.P.	LIST PRICE	ACTUAL SALE PRICE AS IS	ACTUAL SALE PRICE PARTIAL OVERHAUL	ACTUAL SALE PRICE REBUILT
E	1909	Touring	4	4	40	2750	400		

USE SEPARATE BLANK FOR EACH VEHICLE

FILL IN ONLY ONE CAR ON EACH CARD

Fig. 4—Dealers fill in these blanks every time a used car is disposed of and the facts are then entered on the association's records; there is nothing on the blank to indicate from whom it is received

"The cooperation of the members of the Chicago Automobile Trade Association was sought to eliminate a multitude of evils dominating the used-car market, and the dealer was saved from the economic mistake of making too liberal allowances on used cars.

"Our association believes that Chicago has become the best defined used-car central market and the association will utilize its service to dealers, issued quarterly at a cost that will prove to be infinitesimal compared with the good work it will do among dealers. One injudicious deal made in ignorance of trade conditions governing the machine involved will more than offset the cost of the service that our association offers to dealers."

Following is a complete list of the makes of cars that are included in the report:

GASOLENE PLEASURE CARS.

Abbott-Detroit, Alco, Alpena, American, Amplex, Apperson, Auburn.

Benz, Brush, Buick.

Cadillac, Cartercar, Case, Chalmers, Cino, Cole, Columbia, Cunningham, Corbin, Cutting.

Detroiter.

Empire, Elmore, Everitt.

F-A-L, Fiat, Firestone Columbus, Ford, Franklin.

Garford, Great Western.

Havers, Henderson, Herreshoff, Hudson, Hupmobile.

King, Kissel, Knox, Krit.

Lambert, Lexington, Lion, Locomobile, Lozier.

Marathon, Marion, Marmon, Marquette, Maxwell, Matheson, Mercer, Metz, Midland, Mitchell, Moline, Moon.

Norwalk, Nyberg.

Oakland, Oldsmobile, Otto, Overland.

Packard, Paige, Palmer & Singer, Parry, Pathfinder, Peerless, Pierce-Arrow, Pilot, Pope Hartford, Pratt Elkhart, Premier.

Ranier, Rambler, Rayfield, R-C-H, Reo, Regal, Renault.

Sampson, Selden, S. G. V., Simplex, Speedwell, Stanley Steamer, Staver, Stearns, Stevens-Duryea, Stoddard Dayton, Studebaker, Stutz.

Thomas.

Velie.

Warren-Detroit, Welch, Welch-Detroit, White, Winton.

ELECTRIC PLEASURE VEHICLES.

Argo, Baker, Borland, Broc, Century, Chicago Electric, Columbus, Detroit, Flanders, Hupp-Yeats, Ohio, Rauch & Lang, Waverley, Woods.

Hays Gets Michigan Plant for $45,000.

The bid of $45,000 made by former Mayor Charles B. Hays, of Kalamazoo, Mich., for the plant of the bankrupt Michigan Buggy Co. has been confirmed. Judge Sessions, of the Federal Court in Grand Rapids, Mich., issued the order last week. It is understood that Hays has purchased the plant purely as an investment and will not enter the manufacturing field. It is probable that parts of the plant, which consists of many buildings, will be sub-let to various industrial concerns, as it is unlikely that one company desiring the whole property can be found.

Cleveland-Galion Dividend.

The Cleveland-Galion Motor Truck Co., Cleveland, O., has asked authority to pay a second dividend of 15 per cent to its creditors in a report filed in the Cayahoga county court. This report also shows receipts and disbursements from April 23 to July 21. A hearing is scheduled for August 19.

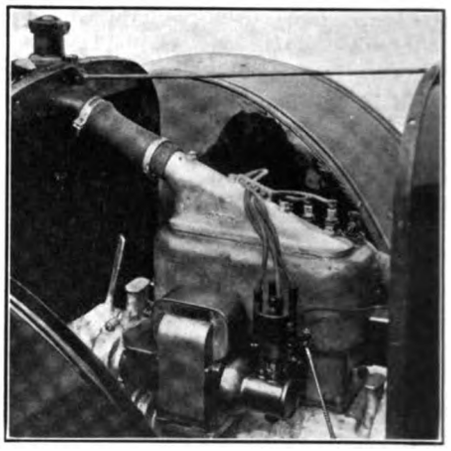
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1915 Monarch Lists at $675

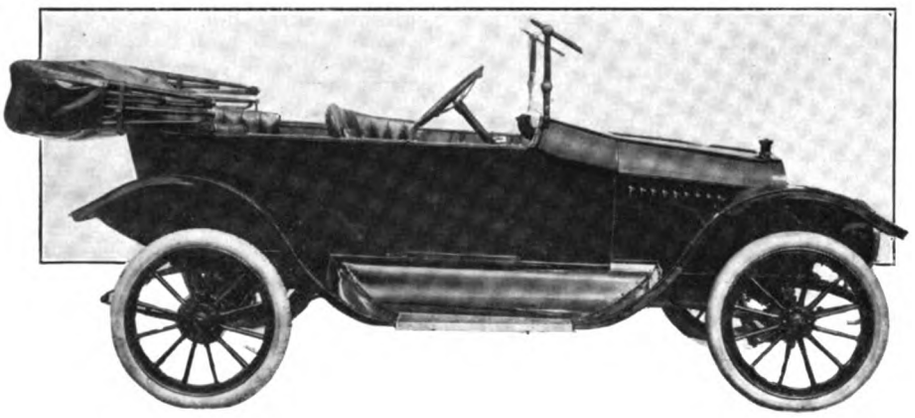
No Rear Doors Used, Folding Front Seat Providing Passage—Equipment Includes Electric Generator.

A new model has been brought out by the Monarch Motor Car Co., Detroit, in addition to its six-cylinder model, which was described in Motor World last June. The latest machine is a four-passenger four-cylinder car which sells for $675 with full equipment, the list including electric lighting on the Auto-Lite system; a Ward-Leonard starting motor will be added for $25 extra.

Semi-floating construction is embodied in the rear axle, which is unusual in that it has a gearless differential with a member at each rear wheel. These members are fitted with roller clutches which provide the differential action. Steering is left and control center and the arrangement of these parts is conventional throughout. The spring suspension includes full elliptic rear springs swiveled on both axle and frame. Wheels are wood with 30 x 3 tires; rear tires are non-skids.



Showing mounting of Auto-Lite generator and distributer on left side of Monarch four-cylinder block motor



Four passengers find comfortable accommodation in the new Monarch, which sells for $675 with complete equipment, including electric lighting. Electric starter costs $25 extra

SELLING FEATURES OF THE LATEST MODEL MONARCH.

Price, touring	$675
Color	Blue-Black
Make of motor	Model
Number of cylinders	Four
Shape	L-head
How cast	Block
Bore	2¾
Stroke	4½
S. A. E. rating	12.1
Ignition	Connecticut
Carburetter	Zephyr
Lighting	Auto-Lite
Clutch	Disk
Gearset	3-speed
Wheelbase	103
Front tires	30 x 3
Rear tires	30 x 3 non-skid
Wheels	Wood
Steering	Left
Control	Center
Make of axles	Detroit
Type of axle	Semi-floating

Ward Leonard starter, $25 extra.

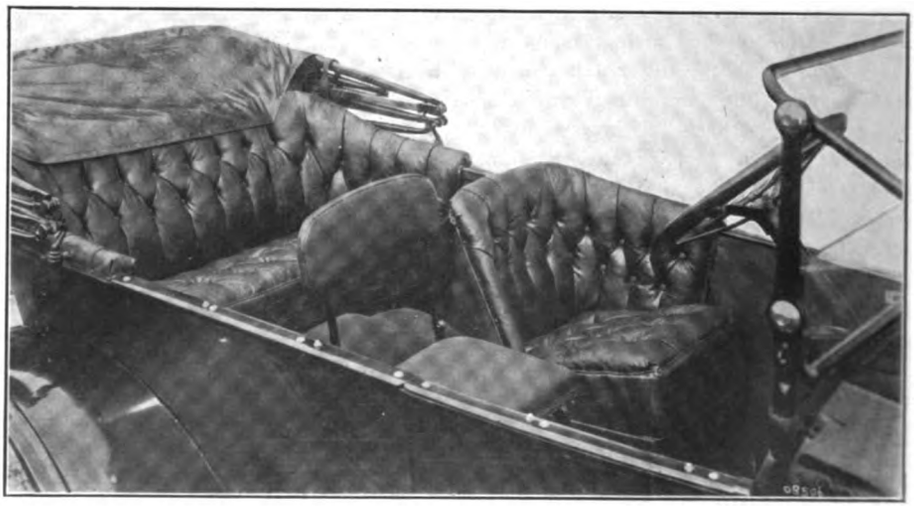
Equipment: One-man top with cover and curtains, windshield, electric horn, Stewart speedometer, tools, etc.

The equipment includes one-man top with cover and side curtains, windshield, electric horn, Stewart speedometer and the usual outfit of jack, tools and so on.

The motor is a Model with its cylinders block cast, with a bore and stroke of 2¾ x 4½ and a S. A. E. rating of 12.1. The valves are all on one side and the stems are covered. The crankcase is of the barrel type with the cylinder block bolted to it. The three-speed gearset is bolted to the motor and the unit thus formed is carried on a three-point suspension. The rear support is a 1¼-inch steel tube which runs through the crankcase and is attached to brackets on the side frames. An unusual feature is the fan drive; no belt is used; the fan is mounted on an extension of the idler timing gear shaft.

The clutch, which is enclosed in the flywheel, is of the multiple disk type, with alternate disks lined with Raybestos. The drive shaft is open and has two universal joints and torsion members on either side paralleling the shaft, running from a cross frame to the rear axle housing.

The body is of the usual modern type, with ample room for four passengers. It is peculiar in that there are no rear doors. Access to the rear seats is had by folding the right front seat, and so opening a passage; the left seat, which is the driver's seat is stationary.



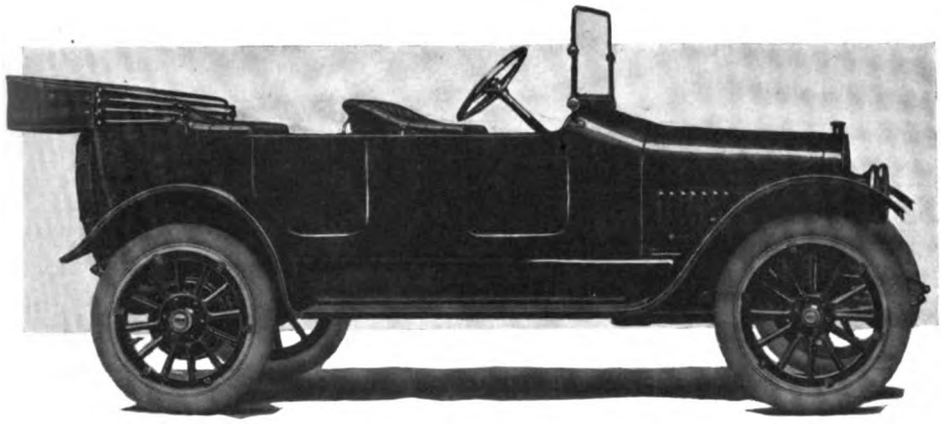
There are no rear doors in the new Monarch, access to the rear being through a space left when the front passenger seat is folded. The driver's seat is stationary

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TWO JACKSONS FOR 1915 BOTH AT REDUCED PRICES

Factory Concentrates on a Four and a Six—$500 Lopped Off Price of Six and Both Models Extensively Improved.

Instead of the three chassis models that were manufactured by the Jackson Automobile Co., Jackson, Mich., for 1914, there will be but two models in the 1915 line, a four and a six, both having much the same outward appearance and both having the Jackson earmarks. The four is designated as the Olympic and the other as the 48 six. It is difficult to draw comparisons, because the new cars are not really continuations of the older models, though they embody not a few of their features. The four has a larger motor than last year's Olympic and not a few improvements; but it costs less, the price being $1,375 with full equipment, as against $1,385 last year. The six has had a big slice cut off its price; the 1914 six with five-passenger body cost $2,150; the new car costs $1,650.



The good features of both the 1914 fours have been embodied in the 1915 four, which sells for $1,375 with electric starting and lighting

The motor of the four has its L-head cylinders cast in pairs and has a bore and stroke of 4½ x 5¼ and a S. A. E. rating of 32.4 horsepower. Both crankshaft and camshaft have three bearings. Wrist-pins are of steel tubing. The valves are rather unusually large, having a diameter of 2 1/32 inches. Pistons have three rings. The timing gears are of steel and iron to facilitate quiet running. Water is circulated by a centrifugal pump and the pump-shaft drives the magneto. Conventional practice is followed in the force-feed and splash lubrication. The motor is a Northway.

The Auto-Lite starting motor is located at the forward end of the engine and is placed with its shaft vertical, driving through chain and ratchet. The generator, also an Auto-Lite, is bracketed to the right side of the engine and is driven at 2½ times engine speed through a silent chain. The system operates on 6 volts and the battery is a 120-ampere hour Willard.

Drive is through a three-speed gearset, built as a unit with the motor, a leather-faced cone clutch and a jointed propeller shaft which runs in a torsion tube bolted by a flange to the rear axle housing. The rear axle is of the floating type, of Salisbury make.

Elliptic springs are used all round. The control levers, formerly on the left, have been relocated in the center, and the steering wheel still is on the left. Last year's cowl gasolene tank has been done away with; the fuel now is carried at the rear and is fed by the Webb Jay vacuum system to the carburetter. Tires are all 34 x 4, the rear tires being non-skids. The wheelbase is 117 inches.

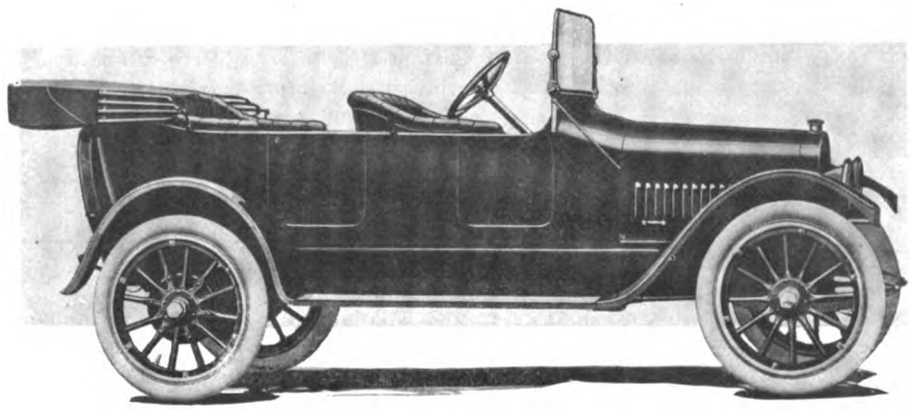
In the six the motor is a block cast Northway with L-head cylinders 3½ x 5 and a S. A. E. rating of 29.4 horsepower. Like the four, it is built as a unit with the three-speed gearset. The upper half of the crankcase is cast integral with the cylinders. There are three cylinder covers, each one covering two cylinders. Copper gaskets make the joints tight. The timing gears are spiral and completely housed. The centrifugal water pump is driven by a shaft on the right side, and back of it is the Delco combination unit which takes care of starting, lighting and ignition. The crankshaft and camshaft have three bearings each. Lubrication is of the constant level splash type, the oil being circulated by a plunger pump.

The propeller shaft in the six is not enclosed and has two universals; a torsion member parallels the shaft and takes the drive. The rear axle is a floating Salisbury, as in the four. All four springs are elliptics; they are allowed full action, despite the low hanging of the car, by the dropping of the frames. The gasolene tank is in the cowl and feed to the carburetter is by gravity; there is also a supply tank at the rear. Tires are all 34 x 4, rear non-skid.

DETAILS OF TWO JACKSON MODELS FOR 1915.

	Four	Six
Price—Touring	$1,375	$1,650
3-pass. roadster	1,375	———
Color	Brewster green	Dark blue
Make of motor	Northway	Northway
Number of cylinders	4	6
Shape	L-head	L-head
How cast	Pairs	Block
Bore	4½	3½
Stroke	5¼	5
S. A. E. rating	32.4	29.4
Ignition	H. T. magneto	Delco
Starter	Auto-Lite	Delco
Lighting	Auto-Lite	Delco
Clutch	Cone	Cone
Gearset	3-speed	3-speed
Wheelbase	117	125
Front tires	34 x 4	36 x 4
Rear tires (non-skid)	34 x 4	36 x 4
Wheels	Wood	Wood
Steering	Left	Left
Control	Center	Center
Make of axle	Salisbury	Salisbury
Type of axle	Floating	Floating

Equipment: Mohair top with cover and side curtains, ventilating windshield, speedometer, electric horn, an extra rim, oil gauge, robe and foot rails, jack, pump and tools.



The Jackson six, which sells for $1,650, with full electrical equipment, is lighter than last season's six, but equally powerful

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WIDE-AWAKE MERCHANDISING

HOW MUCH OF EACH POSTAGE STAMP "LOAFS ON THE JOB?"

If Every Letter You Send Out is Not Aimed at Someone's Good-will It is Part of Two Cents Wasted—Jeffery Tells of the Possibilities.

"Every employe who spends postage on a single letter in routine correspondence that fails to further create a spirit of good will between this company and the customer is wasting opportunity after opportunity," says the Thos. B. Jeffery Co., in a bulletin which it is sending out to its dealers. It is merely a card 8½ x 11, printed in good, clear type and suitable for hanging on the wall.

Result Worth the Effort.

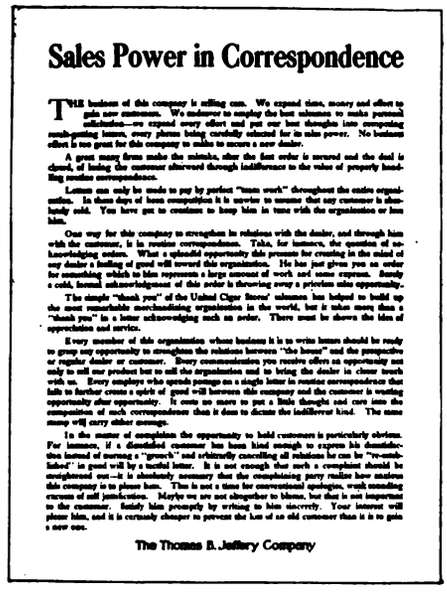
"The business of this company is selling cars," the card says. "We expend time, money and effort to gain new customers. We endeavor to employ the best salesmen to make personal solicitation—we expend every effort and put our best thoughts into composing result-getting letters, every phrase being carefully selected for its sales power. No business effort is too great for this company to make to secure a new dealer.

"A great many firms make the mistake, after the first order is secured and the deal is closed, of losing the customer afterward through indifference to the value of properly handling routine correspondence.

"Letters can only be made to pay by perfect 'team work' throughout the entire organization. In these days of keen competition it is unwise to assume that any customer is absolutely sold. You have got to continue to keep him in time with the organization or lose him.

"One way for this company to strengthen its relations with the dealer, and through him with the customer, is in routine correspondence. Take, for instance, the question of acknowledging orders. What a splendid feeling of good will toward this organization. He has just given you an order for something which to him represents a large amount of work and some expense. Surely a cold, formal acknowledgment of this order is throwing away a priceless sales opportunity.

"The simple 'thank you' of the United Cigar Stores' salesmen has helped to build up the most remarkable merchandising organization in the world, but it takes more than a 'thank you' in a letter acknowledging such an order. There must be shown the idea of appreciation and service.



Sales Power in Correspondence

THE business of this company is selling cars. We expend time, money and effort to gain new customers. We endeavor to employ the best salesmen to make personal solicitation—we expend every effort and put our best thoughts into composing result-getting letters, every phrase being carefully selected for its sales power. No business effort is too great for this company to make to secure a new dealer.

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Letters can only be made to pay by perfect "team work" throughout the entire organization. In these days of keen competition it is unwise to assume that any customer is absolutely sold. You have got to continue to keep him in time with the organization or lose him.

One way for this company to strengthen its relations with the dealer, and through him with the customer, is in routine correspondence. Take, for instance, the question of acknowledging orders. What a splendid opportunity this presents for creating in the mind of any dealer a feeling of good will toward this organization. He has just given you an order for something which to him represents a large amount of work and some expense. Surely a cold, formal acknowledgment of this order is throwing away a priceless sales opportunity.

The simple "thank you" of the United Cigar Stores' salesmen has helped to build up the most remarkable merchandising organization in the world, but it takes more than a "thank you" in a letter acknowledging such an order. There must be shown the idea of appreciation and service.

Every member of this organization whose business it is to write letters should be ready to grasp any opportunity to strengthen the relations between 'the house' and the prospective or regular dealer or customer. Every communication you receive offers an opportunity not only to sell our product but to sell the organization and to bring the dealer in closer touch with us. Every employe who spends postage on a single letter in routine correspondence that fails to further create a spirit of good will between this company and the customer is wasting opportunity after opportunity. It costs no more to put a little thought and care into the composition of such correspondence than it does to dictate the indifferent kind. The same stamp will carry either message.

In the matter of complaints the opportunity to hold customers is particularly obvious. For instance, if a dissatisfied customer has been kind enough to express his dissatisfaction instead of nursing a 'grouch' and arbitrarily canceling all relations he can be 're-established' in good will by a tactful letter.

"It is not enough that such a complaint should be straightened out—it is absolutely necessary that the complaining party realize how anxious this company is to please him. This is not a time for conventional apologies, weak sounding excuses of self justification. Maybe we are not altogether to blame, but that is not important to the customer. Satisfy him promptly by writing to him sincerely. Your interest will please him, and it is certainly cheaper to prevent the loss of an old customer than it is to gain a new one."

The Thomas B. Jeffery Company

The Jeffery message of opportunity is a neat piece of typography

Complaints an Opportunity.

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No doubt someone in your neighborhood is talking "Gloom." Our job is to talk sunshine.

"Make the best of every situation," is a Man's religion, and go to it hard.—Henry B. Joy, to Packard dealers.

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Hold Cabaret of Used Cars

Rochester Dealers Move Stock By Novel Method of Their Own.

The Strong-Crittenden Co., Rochester, N. Y., which sells Lozier, Chandler and Paige cars, has discovered a method of dealing with the used car problem that is at once simple and effective.

Most dealers who have used cars for sale either list them in the front window on a bulletin board or list them in the liner columns of the local papers. In addition to these methods some concerns send out weekly and monthly lists and descriptions of used cars on hand.

These are all good. But they don't move the cars fast enough.

A used car is usually an uninteresting object. And yet it can be surrounded with the "human touch" and given a world of interest. That's what Strong-Crittenden has done and is doing by means of a continuous used car sale which it runs under the heading "Rochester Cabaret Show."

That heading is the first move. The next is the list of the "attractions." These, of course, are the used cars. Each one is briefly described and is given a personality in a brief, snappy two-inch single column advertisement. Some of these two-inch advertisements are reproduced. Note the strong, simple display and the little touch of humor injected without any apparent effort.

That "Abbott-Detroit family"—mentioned in one of the advertisements and referred to in several subsequent ones—was a very happy idea. And observe how the new cars are boosted without depreciating the used ones taken in exchange.

These small announcements in connection with a larger one that advertises the "Rochester Cabaret Show" proper are closely read by Rochester car buyers and by all Automobile Row. They are the talk of the trade. And the public likes to read them because they have the spice and individuality that interests.

Any dealer can run a "Cabaret Show" of this character—and all it needs is the aid of a clever advertising writer who will enter into the spirit of the plan and follow it out.

Does the scheme sell cars? Of course it does. And sells them faster than any other method yet tried by the Strong-Crittenden Co. Watch the advertisements in the Rochester papers if you have a chance and note how the line-up changes, showing that fast action is the order of the day.

SCIENCE OF "KNOW" THE ONE TO FOLLOW

There Is Ample Reason Why It Is Making Headway in Business World.

What is scientific method in business? A great deal of it is simply talk. But there is a decided tendency towards doing business, whether it be running a shop, foundry or factory, on lines of **know** instead of on opinions or guesswork. That in brief is scientific method.

Or, to be more precise, scientific method in business is the method that says: "Let us classify all the facts in regard to our business in orderly form—let us be sure they **are** facts, then let's study them in logical order and arrange our plans and methods accordingly. Let us eliminate guesses and substitute facts."

Do you see how and why the so-called scientific method is making headway? Why it is the one method even for the merchant of small dimensions as well as the great big fellows?



Strong, simple, catchy and just the thing to be watched for every day—and read. Look over these samples; then read the story; then see if there is not some part of this—if not all—that will help move some of those used cars which are using up perfectly good space in the back of the building

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New Pilgrim Is Light Weight

Sells for $650 With Electric Lighting and Starting and Full Equipment—Built Only for Four Passengers.

Conventional design throughout and the use of standard parts mark the Pilgrim light car, a new machine that is being prepared for the market by the Pilgrim Motor Car Co., Detroit, as was stated in the last issue of Motor World.

The car will sell for $650 with four-passenger streamline body and complete equipment, including electric starting and lighting, top, windshield, electric horn, speedometer and the usual tools, etc. The car is distinctly in the light class, the weight being given as about 1,300 pounds, with equipment; the wheelbase is 100 inches and tread 56 inches.

The motor has four block-cast L-head cylinders 3⅛ x 4, the S. A. E. rating being 15.6. Valve mechanism is all enclosed; valves are 1⅛ inches diameter and the lifters are adjustable. The exhaust manifold, on the right, is a separate casting, while the intake passages are cored in the cylinder block and the carburetter riser bolts to the casting. Cooling is by gravity and the fan is belt driven. A single head casting covers all the cylinders, which are cast integral with the crankcase. The crankshaft has three bearings.

Ignition current is supplied by the Willard storage battery and distributed by a Connecticut distributer. The battery is charged by an Auto-Lite generator; the starting unit has not yet been decided upon. The carburetter is a Schebler.

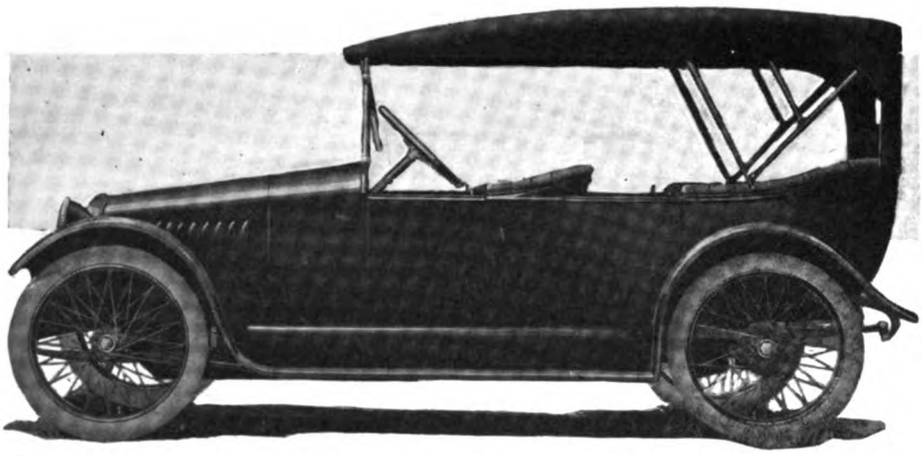
The Northern Engineering Co.'s gearset is mounted as a unit with the rear axle housing and provides the conventional three speeds. Drive is through a cone clutch and propeller shaft with Spicer universal enclosed in a tube which takes care of torsional stresses. Two brace rods run from the rear axle housing to the front end of the tube.

The rear axle is semi-floating and runs on Hyatt roller bearings. Wheels are of wire, with 30 x 3 tires. The spring suspension includes 30-inch front springs and 40-inch rear, the latter three-quarter elliptics. Steering is left and control center. There are no levers on the wheel, the spark advance being on the dash and the carburetter control all in the accelerator, which can be used as a fixed control, like an ordinary lever, or as a conventional accelerator.

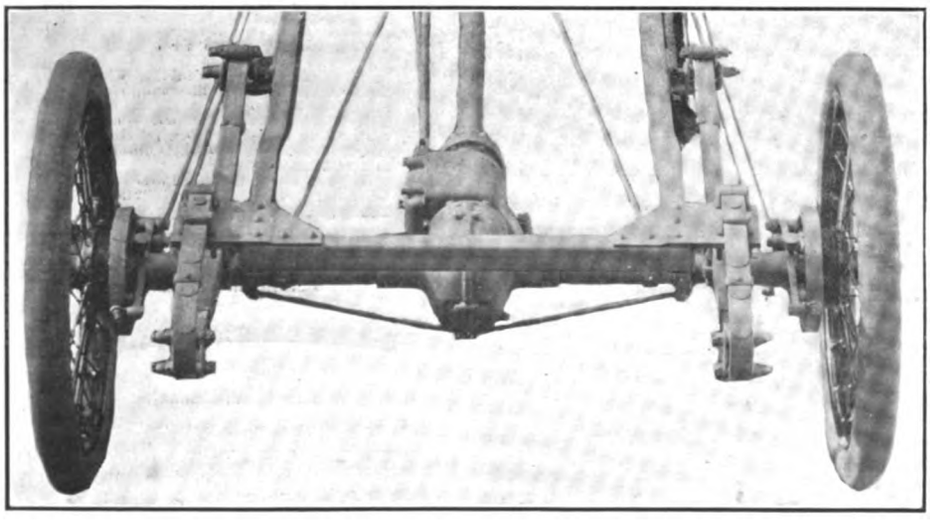
DETAILS OF THE PILGRIM COMPANY'S NEW CAR.

Price, touring	$650
Color	Black
Number of cylinders	Four
Shape	L-head
How cast	Block
Bore	3⅛
Stroke	4
S. A. E. rating	15.6
Ignition	Connecticut
Carburetter	Schebler
Lighting	Auto-Lite
Clutch	Cone
Gearset	3-speed
Wheelbase	100
Tires	30 x 3
Wheels	Wire
Steering	Left
Control	Center
Type of rear axle	Semi-floating

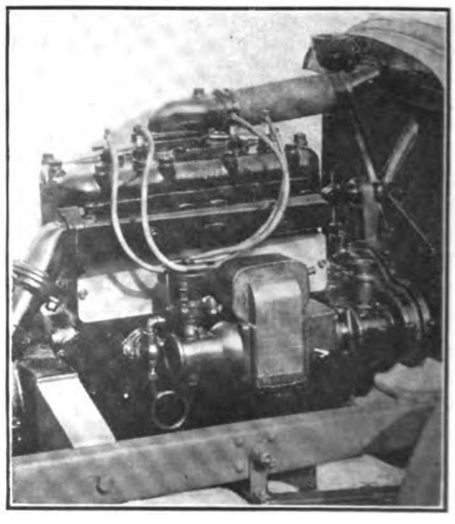
Equipment: One-man top, electric starting and lighting, windshield, speedometer, electric horn, jack, tools, etc.



Pilgrim light touring car which is built in one model only and sells for $650 with full electrical equipment. Wire wheels are regularly fitted—the body is of sheet steel



The three-speed gearset is mounted on the rear axle housing and the rear end of the torque tube is bolted to it. The housing is trussed



A single head casting covers all four cylinders, which are cast with the crankcase

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Listen to Yourself Talk Over the Telephone

Maybe Your Voice Isn't as Sweet as It Might Be—Reilly Would Pay Money for the Right Voice.

By Ray W. Sherman

Reilly came around the corner of a clump of bushes on high and over the rail fence in a way he had never come before.

"Where's the apples?" The Sales Manager relinquished his prone posture of supreme laziness and sat upright as Reilly landed in a very unsalesmanlike attitude on the grass.

Before Reilly could get breath to answer no answer was required. Around the bushes the answer to "no apples" came snorting and stopped abruptly on his own side of the fence, where he pawed and shook his ugly looking horns at the recent invader.

"—He Wouldn't Let Me Have—Any."

"That's why—I didn't get any—he wouldn't let me—have any," panted Reilly, as he mopped the perspiration from his face and adjusted his clothes.



Around the bushes the answer to "no apples" came snorting . . . .

"Well," decided the Sales Manager, "let's go back to the hotel. I knew you wouldn't get any apples. I never went with you and got anything yet. The women'll be late for dinner if we don't move along."

"I suppose so," drawled Reilly, and the two started back for the little lakeside hotel, where they were forgetting business for a couple of weeks.

"It's about time! About time!" was the greeting from the veranda as they sauntered up the shady village street. But nothing could make them accelerate an iota and they dragged and poked up the steps and toward the dining room.

Half way across the lobby Reilly held up one finger in a Dr. Munyon gesture and, as everyone stopped stock still, started for the cigar stand. His magazine was getting empty and he had to load up.

"Some Girl," Announced Reilly.

"Howdy do?" smiled the telephone girl as the procession, which finally had started again, filed past her on its way to the dining room. To Katie, the telephone operator, they simply had to smile back. Everyone did. They even smiled over the telephone and it almost seemed as if they could see Katie's smile at the other end.

"Some girl, that!" announced Reilly, as the last member of the party gave the last settling-down shuffle to the chairs.

"Is that so?" said Mrs. Reilly. And she said it not as if it were a demand for information but as if she knew too much already.

"Good telephone girl, I mean."

"Oh!" This ejaculation came from the Sales Manager in an I-didn't-get-you-right-the-first-time-but-now-I-see-what-you-mean tone.

"Yes, Oh," replied Mrs. Reilly.

Reilly ignored the remark.

Voice Worth a Thousand Dollars.

"That voice is worth a thousand dollars," he asserted. "Yes, two thousand."

"Make it a million," chided the Sales Manager; "it won't cost you any more."

"I mean it!" declared Reilly. "It's the equivalent of real cash money. I wish I had a few of them in my place of business."

"What's the matter with the ones you've got?" demanded the Sales Manager. "Aren't they pretty good?"

"Not much complaint on that score, but you don't find many telephone voices like that girl's got."

"No?"

"Most certainly not! If you know of any, where are they? Not at the factory by a long shot!"

The Sales Manager had no comeback.

"I think I'll start a telephone voice course of instruction as soon as the warm weather's over," announced Reilly. "I don't think it would do any harm at the factory, either," he continued with a hard look at the Sales Manager. "Telephone voices mean a whole lot in business and few people take full advantage of the opportunity that the telephone offers for giving the public a sunny impression of your place of business. There are too many gruff voices."



"Howdy do?" smiled the telephone girl as the procession filed past

"Unmannerly? Impudent?" questioned the Sales Manager, making a reach for a stick of celery.

"Not that! Not that!" cautioned Reilly. "I don't mean that at all. The unmannerly and impolite man isn't entitled to consideration. There's no hope for him. I'm talking about the decent, respectable people who don't know their voices sound.

Trumbull a Perfect Gentleman—But.

"Now there's Tommy Trumbull," Reilly went on. "There isn't a more perfect gentleman in the business than that lad, yet when he first came with me I had to caution him about the way he talked over the telephone."

"Kind o' sharp?"

"That's it! He didn't mean to be—but he was. I never realized it until I had occasion to call the office from the outside one day and Tommy answered the telephone. I was somewhat shocked at the voice that came out of my own office. I didn't recognize it as Tommy

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for a few seconds. It sure had me guessing."

"What ailed him?"

"Just over-enthusiastic, that's all! His enthusiasm got into his voice and he didn't know it."

"Thought he was talking like a business man, eh?"

"Oh, I don't believe that was it so much as it was that he was under a sort of nervous tension. You see," Reilly explained, "Tommy hadn't been out of high school long when he came with me. I didn't go after him. He insisted that he was coming to work for me, and I liked his earnestness and determination so I took him on. He immediately started in to make good and worked pretty hard, and you can see yourself it was somewhat of a nervous strain.

Keep Watch on Telephone Voice.

"He was pleasant enough with people he met personally in the salesroom and wasn't rude over the 'phone, but his briskness gave his voice a gruff sound that wasn't pleasing. I think every man ought to keep close watch on his telephone voice."

"The telephone talker is handicapped in that the telephone is such a darned impersonal thing," argued the Sales Manager.

"That's just the trouble!" exclaimed Reilly. "It's impersonal, but conversations over it should be regarded as more personal than any personal conversation. If one of your best customers walked in would you run up to him and shout Hello! Hello! Certainly you wouldn't! Yet if this same best customer tries to talk with you over the telephone you are quite likely—that is, some people are—to open the conversation by yelling Hello at him. That's a fine introductory, isn't it?"

"It might be improved upon," agreed the Sales Manager.

"Begins That 'Hello! Hello!' Business."

"I have in mind a man in the Midland Railroad office in Callawassa. I have known him for years and have bought many miles of transportation from him. The railroad also gets many dollars a year out of the Sennett company for the cars and parts shipments between Sayanna and Callawassa, and there is every reason why our relations should be the best.

"Whenever I call up, Hanscomb takes down the receiver and begins that Hello! Hello! business. As soon as he finds that I am talking to him his voice seems to change and he is quite decent, but his first greeting is more like that of a bear than that of a man. It certainly isn't good business."

"Maybe he can't help it," pleaded the Sales Manager.

"Agh-gh-gh!" grunted Reilly, "anybody can help it except a natural grouch. All that is necessary is that a man pay a little attention to the matter and see that his first word after taking down the receiver is pleasant—even more pleasant than it would be were the man in front of him in person. If he feels called upon to get gruff when he finds out who is talking that is time enough. It is better to start pleasantly and get



"Whenever I call up . . . Hanscomb begins that Hello! Hello! business"

gruff than to start gruffly and then have to get pleasant."

"That sounds reasonable."

"And it is!"

"The telephone companies are always shouting about how 'The voice with the smile wins,' and so forth," suggested the Sales Manager.

Familiarity That Breeds Contempt.

"And they're right!" asserted Reilly. "The only trouble is people read it and hear it and know it's right, but don't put it into practice. Familiarity with the motto seems to have caused it to lose its effectiveness so far as the telephoning public is concerned. You see those signs stuck over telephones in offices everywhere, and you'll find men in those same offices yelling into the telephones just the same.

"Too many men get so wrapped up in their business that they neglect some of its most important details. I suppose some of them think they are above bothering with all the details. Maybe they are, but being decent over a telephone isn't a detail; it's a mighty big part of a business. It's just as important as how you meet people who come in."

"Ever strike a real sassy telephone girl?" smiled the Sales Manager.

"Did I? Say! The Everwear tire people in Callawassa had one for a while, until they got next to the kind of bird she was—and then they fired her quick. She was killing more business than all their salesmen and advertising could dig up. She was something awful——" Reilly held up both palms. "She was the meanest, nastiest little snip that ever sat at a switchboard. I'd like to kill her! I——"

"Come on! Come on! Let's get out of here!" urged Mrs. Reilly, as her husband relighted his after-lunch cigar for the third time.

"Where now?"

"Back to the veranda—and I'm going to sit where I can keep an eye on that switchboard."

Speed Violator Not a "Murderer."

The supreme court of the State of Michigan has just held that the accidental killing of a person by a motor car, even when the car is exceeding the state speed limit, is not manslaughter unless culpable negligence has been proven.

The case concerns William J. Barnes, Lansing, who accidently ran down a girl in May, 1911, the victim dying in consequence of the accident. Barnes was convicted by the Ingham County Circuit Court, Judge West of that court holding that inasmuch as the state law requires motorists to slow down to 10 miles an hour when approaching pedestrians, Barnes had by failing to slow down caused the accident. It was shown in the testimony that the girl in her excitement jumped in front of the oncoming car.

The supreme court held that Barnes could not be held guilty of manslaughter unless culpable negligence was shown.

Cowan Heads Dayton Association.

At the annual election of officers of the Dayton Automobile Trade Association, Dayton, O., M. Cowan, of G. W. Shroyer & Co., was elected president; R. Gerkins, of the Gerkins Oil Co., vice-president; R. Rench, of the Dayton Overland Sales Co., secretary, and M. Borchers, of the Borchers Carriage Co., treasurer. It was decided that a fall show be held in conjunction with the county fair.

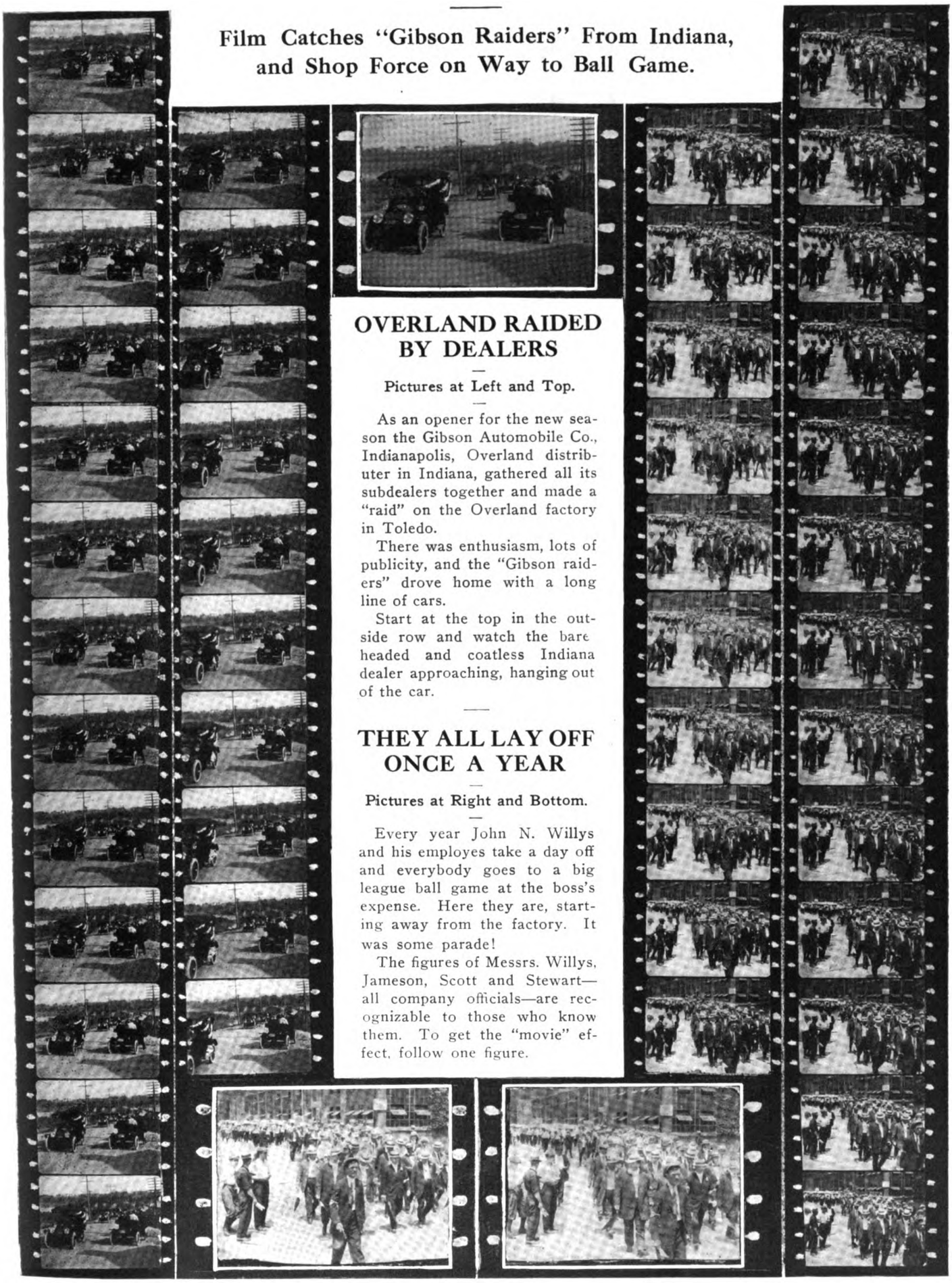
Buick to Build 40,000 Cars for 1915.

According to President Charles W. Nash of the Buick Motor Co., Flint, Mich., the original plans of the company to build 40,000 cars for the season of 1915 will be carried out notwithstanding the war. More than 5,000 men are now employed at the plant and the average daily output is 230 cars.

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Overland Dealers and Workmen in "Movies"

Film Catches "Gibson Raiders" From Indiana, and Shop Force on Way to Ball Game.



OVERLAND RAIDED BY DEALERS

Pictures at Left and Top.

As an opener for the new season the Gibson Automobile Co., Indianapolis, Overland distributer in Indiana, gathered all its subdealers together and made a "raid" on the Overland factory in Toledo.

There was enthusiasm, lots of publicity, and the "Gibson raiders" drove home with a long line of cars.

Start at the top in the outside row and watch the bare headed and coatless Indiana dealer approaching, hanging out of the car.

THEY ALL LAY OFF ONCE A YEAR

Pictures at Right and Bottom.

Every year John N. Willys and his employes take a day off and everybody goes to a big league ball game at the boss's expense. Here they are, starting away from the factory. It was some parade!

The figures of Messrs. Willys, Jameson, Scott and Stewart—all company officials—are recognizable to those who know them. To get the "movie" effect, follow one figure.

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What Do You Think of Bargai

Here's a Man Who Thinks That Running a Bargain C Draw Trade and That the Trade Will Sp

This is a letter which has come to Motor World. It has to do with one of the uppermost questions in the supply and accessory trade—that of price and price-cutting.

The writer, whose real name is withheld at his request, advocates the application of department store bargain methods to the supply store. He makes a good point, but supplymen whom Motor World has seen do not wholly agree with him. Read his letter and the opinions of two of the supplymen.

After reading it, write and let us know how you view the subject. It is an important question and has never been settled for the supply trade as a whole.

THIS IS THE LETTER.

"The accessory dealer who really wants to have the business of his town will not find it extremely hard to draw the bulk of the trade toward his store. The prime requisites are to have a stock of accessories that people want, a proper place to display them and a sound, aggressive merchandising plan.

"Department stores, hardware store and mail-order houses are making inroads into the business, it is true. And the reason they are successful is that once having the department installed they systematically let the motoring public know about it.

This Much is True, But——

"Incidentally they have 'leaders' from time to time which serve to direct attention to their goods more forcefully than words and promises. And when a man gets to the department store and buys one of the 'leaders' he is almost certain to see many other articles he desires—and that is where the department store makes its profit.

Yes, Why Not?

"Why cannot an accessory house work on the same plan and be just as successful? There is no reason in the world.

Is This Also True?

"Supposing you sell spark plugs for 29 cents and perhaps make only a cent or two profit—perhaps lose a cent or two on each one. What does that amount to? You draw the motorist to your place of business by the special offer and then by having your goods enticingly displayed you are sure to sell him many other articles of merchandise at regular prices.

Would the Plan Work?

"Supposing that once a month you offer one or two special bargains for a certain week. Get the name of every motorist in your city and write a letter saying that in such a week you will sell a high class screwdriver—and describe and illustrate it—that regularly sells for $1 for 39 cents. Say in your letter that the offer will be for that week only—and stick to it.

How Would He Take it?

"If a motorist comes in three days or one day after the date named, tell him frankly that the offer was only for the week named. Show him the article, emphasize its good points and convince him that it is worth every cent of the regular price and try to sell him. If he does not buy tell him that next month you will have a 'special' equally interesting and that you intend to send him a notice in regard to it; but that it will be sold at the special price only during the dates mentioned.

Would That Be His Only Feeling?

"He cannot have any excuse for feeling anything but regret that he missed so good a bargain. When your next letter comes in advertising something he wants he will buy it. And in the meantime you have made a strong impression and fixed your store in his mind as a good place to go for accessories.

"Next time you can take some other article—a good jack, a horn, or whatever seems most attractive. Feature it! And be sure to have your show cases attractively dressed with other articles, many of them priced with price tags just as you have seen the hardware and the clothing man and the department store do it. You will not only sell your leader in large quantities but you will sell much other merchandise besides.

How About This?

"If the manufacturers kick about your cutting prices tell them to stop the department stores and the mail-order houses cutting prices and then you will stop.

It Is a Good Argument.

"Fire must be fought with fire. You cannot sit idly by and let someone take your business away from you. And the only way to draw and keep the trade is to have a regular plan for getting it.

Have You Ever Tried It?

"Get the idea of writing every motorist at least once a month on some special offer and you will quickly develop a volume of profitable trade greater than you ever dreamed was possible.

"Yours truly,

"J. K. MARSTON."

Two Supplymen Say It Is Not a Good Scheme—They Tell Why

One Says He Tried It and Failed—He Says the Price, Once Cut, is Down Forever.

THIS IS WHAT HARVEY ADAMS SAID ABOUT IT.

Adams is manager of the Auto Supply Co., Columbus Circle, New York city, of which George Robertson, one-time racing driver and twice Vanderbilt winner, is the proprietor. He said:

"I don't believe it is a good plan. It may work in the department store, but I don't think it can be applied with success to the supply business. I don't think there is anything the supply man can better keep away from than a cut price. It is very bad business.

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Methods in the Supply Store?

'rice Sale for a Week Is a Good Thing—He Says It Will ts Money for Articles Not Cut—Is He Right?

"We tried something of the sort once and it cost us $12,000 and did no good whatever. We determined to have a 'bargain department' on the mail-order plan. We engaged a capable man to handle the advertising and other work and gave him a part of our establishment in which to work. Every month we listed certain articles at low prices and circularized an extensive territory about our store. The city was covered by newspaper advertising.

First Month Made 5 Per Cent.

"The first month we cut things down to below cost, or at best not more than a 5 per cent profit. The buyers were wise; they knew a good thing when they saw it, and we sold quite a lot of stuff. The next month we listed our bargains but tried to make a little more profit than we made the first month. We didn't want to run it at a loss forever.

Third Month Made 15 Per Cent.

"We figured that if we could make about 15 per cent on our 'bargains' we could afford to run the department, so the third month—with a different lot of articles, of course—we sold at a profit of about 15 per cent. Again the buyers were wise. They knew what a thing was worth and when we tried to make 15 per cent the sales dropped off amazingly. The venture was not a success. Between the expenses and lost profits it cost us $12,000 and we gave it up.

Public is "Bargain Wise."

"There are so many stores which make a business of price-cutting that a store which holds to list and tries to advertise bargains has got to cut away down to the price-cutter's mark or the public, which is very wise, won't buy. They know they can get a better 'bargain' elsewhere.

Trade-Mark Affects Situation.

"So much of the stuff we handle is backed by the manufacturer's mark that people know its real value. It is not like a department store bargain, where the store can, if it wishes, sell something as a bargain and still make a profit on it. Neither do we have so many women to deal with, and they are an important factor in bargain sales. We get more men and many of them are chauffeurs who have been sent for something—and nothing else.

Once Cut It's Cut Forever.

"Furthermore, if a thing is once cut in this business it is very, very hard ever to get the list price for it again. Explaining that it was cut for one week only does not go. The customer has seen it or bought it once for a cut price and its value is to him forever after depreciated."

THIS IS FRANK S. LOWE'S VIEW OF THE PLAN.

Lowe is proprietor of the Lowe Motor Supplies Co., Broadway and West 55th street, New York city. His company does mostly a wholesale business to garages, but he has had long experience in the supply trade. His opinion follows:

"A department store can cut the price on a suit of clothes and the next week raise the price again, but the clothes you see the next week are slightly different perhaps in color or something. In this business it is different. A lamp is a lamp and a wrench is a wrench. There are no styles in lamps and wrenches as there are in shirts and such articles.

A Wrench is Always a Wrench.

"Stores cut on men's wear, for instance, and while the stuff looks good and is good it is season stuff which is being closed out and has got to be moved. But the supplyman. He can keep a wrench for two years and it is the same old wrench. Neither do I think cutting a price on an article to get a man into your store would ever result in the sale of other articles or be much of a trade puller. It might help a little, but the net result would be a financial loss."

Here's a New Way of Piling Up Tires



Instead of piling up two or three tires in their window in what has come to be regarded as the conventional manner, the Belcher & Loomis Hardware Co., 83-91 Weybosset street, Providence, R. I., worked out this attractive display. Note the arrangement and the liberal use of advertising matter.

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PLAIN FIGURE MARKINGS ON DROP FORGED WRENCHES

Simple System of Designating Various Sizes Makes Their Selection Easy—Helps Salesman and Purchaser.

When a customer orders a wrench he probably wants it at the time of ordering, and wishes it to be delivered immediately. Under these conditions, if the dealer makes prompt delivery he will have pleased a customer who will remember where he can get his orders filled quickly. If the dealer is unable to fill the order by return mail because his customer has neglected to plainly specify what is wanted, everybody is sore.

The same conditions often exist between the dealer and the manufacturer; that is, the delay in filling an order is caused by incorrect or incomplete specifications. The buyer has failed to make clear just what is wanted.

There are only two things necessary to specify when ordering drop forged wrenches, viz: the number of the wrench and style of finish. However, it often happens that a customer has no catalog handy and therefore tries to make clear his requirements by stating for what purpose the wrench is required. This is all right if the statement is properly and clearly put, which oftentimes is not the case. For example, it often happens that the manufacturer gets an order for a wrench to take a one-half inch nut and fills the order accordingly, with the result that he is asked to replace the wrench with one that has a one-half inch opening.

Nuts are designated by the size of the tapped hole, or the size of the bolt on which they are used. Bolts and cap screws are designated by the size of the diameter of body or shank; therefore, a half-inch U. S. Standard hexagon nut requires a wrench with an opening measuring 7/8 inch.

Standard lists of drop forged wrenches as a rule cover three styles of finish, namely: "Unfinished," "semi-finished" and "finished," and prices vary according to the style of finish required. Therefore it is essential that an order should plainly state the style of finish wanted.

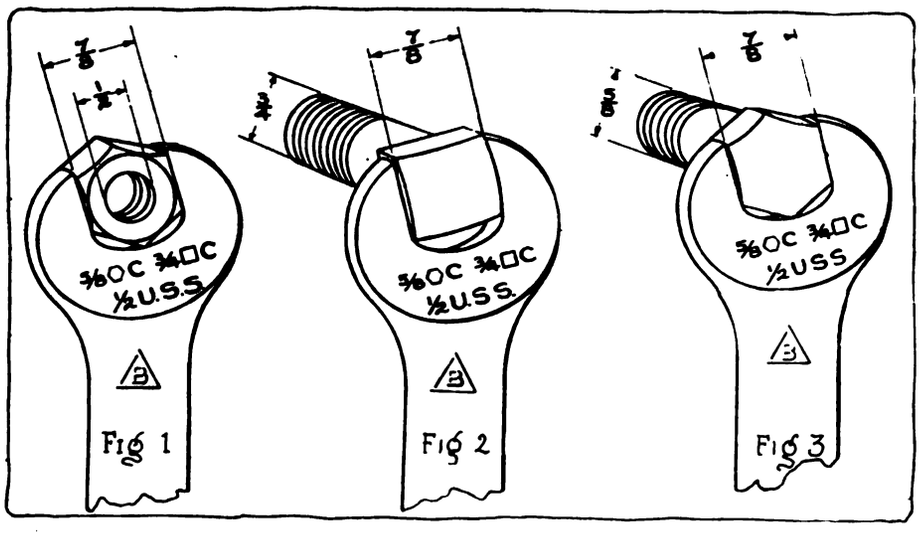


Fig. 1—Marking shows that this wrench can be used for 5/8 hexagon cap screw. 3/4 square cap screw and 1/2 standard U. S. nut or bolt. Fig. 2—This wrench has the same 7/8 opening and therefore fits the same nuts. Fig. 3—The same size opening fits both 3/4 U. S. standard bolt and 5/8 hexagon cap screw

The Billings & Spencer Co., Hartford, Conn., has developed a system of stamping semi-finished and finished wrenches that should obviate much confusion.

The head or heads of wrenches are stamped so as to show for what purpose the wrench can be used.

For example, if the wrench is for a 3/16-inch U. S. Standard nut or bolt, the opening measures 13/32 inch and the head is stamped "3/16 U. S. S."

If the opening of the wrench measures 7/8 inch, the head is stamped as in Fig. 1, showing that the wrench can be used for 5/8-inch hexagon cap screw or 3/4-inch square cap screw or a 1/2-inch U. S. Standard nut or bolt. Also, a 3/8-inch opening will take a 3/8-inch set screw, a 3/16-inch hexagon cap screw or a 1/4-inch square cap screw.

This system will undoubtedly be of service in familiarizing the salesman in the store with the various wrenches and purposes for which they can be used.

MAKE TRANSIENT CHARGE ACCORDING TO SPACE USED

Small Car Should Pay Low Rate and Larger One a Higher Rate—Opportunity for Profit in Tire Repairs.

What is a proper charge for storage of transient cars over night?

There seems to be a wide diversity of opinion. Some garages hold that a minimum charge of one dollar, for which they give plain storage plus little attentions such as seeing that the radiator is filled, etc., is none too much. In cities of over 50,000 population one dollar is the regular charge. In many cities and towns under that size 25 cents seems to be the standard charge. And it is worth all of that to the motorist.

Down in Litchfield, Minn., a short time ago a man drove into the Ford garage. He had a big car. It pretty nearly blocked up the front of the garage. The driver almost felt as if he were imposing on the garageman-dealer in occupying so much of his space. Yet the next morning when he asked for his bill he was told the charge was just 25 cents.

It was worth all of $1.50 and if he had been asked that much he would probably have paid it and gone away with respect for the dealer who had sense enough to make a fair charge.

Even if the rent is low in Litchfield, which is doubtful, a quarter of a dollar is not enough to charge for one night's storage, and the dealer ought to know it.

The great problem in the motor car business is to keep the money that comes in the front door from slipping out the back door. Surely this is one of the ways in which it may easily be coaxed to stay.

In Spicer, Minn., there is a fine garage; nevertheless, there is not a place in either Spicer or Litchfield where one can get a casing vulcanized. The garages can make repairs on inner tubes, but no one can repair a casing cut or tear. Here again is a money-making opportunity that is being overlooked. In the neighborhood are hundreds of cars owned by farmers and local residents, but casing repairs have to be sent out of town.

What a chance for one of these garages to establish a paying tire repair business and incidentally give its customers a much needed service. It is not enough to sell the cars. Facilities for their necessary care should be provided.

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Taxicab Operation Requires Careful Study

Substitution of New Cars for Old Ones Transformed a Loss Into Profit —Strict Economy Necessary for Success.

Can the taxicab business be made to pay in a city of 26,000? In Elgin, Ill., there are five companies doing a taxicab business; yet only one of them is making money; the others are losing money. Why? Simply because they did not go about it in the proper way. They did not grasp every opportunity to increase their revenue. The other company—the prosperous one—operated on an efficiency basis and it is making money.

In the operation of taxicabs in a small town, a number of problems present themselves, and if the owner is not fully in touch with the details of an efficient system, if he cannot cut overhead where it should be cut, buy his tires at the proper time and place, have the cars overhauled at the proper time, little if any money can be made and in most cases a loss will result. This statement is prompted after a study of the taxicab service in Elgin, Ill., with a population of 26,000 and a comparatively large number of transients.

There are three large taxicab companies in Elgin and two smaller ones, and of the five only one really is making money.

Surroundings Determine Equipment.

The first difficulty which presents itself in the establishment of a small-town taxicab service is the kind of car to buy, whether new or second-hand, opened or closed bodies, and the number of each and the make of car. A number of things must be weighed before the cars are purchased. Is the country hilly? If it is one must get cars that are light, but not unnecessarily fast; one must get cars which will not eat tires or gasolene. After the surrounding country is analyzed one is able to select cars which will best fill the bill.

Shall these cars be bought new or second-hand?

The Elgin taxicab companies have used both and not one concern believes that used cars, when in service, will show the same profit as new cars. Klein Bros., perhaps the largest Elgin taxicab company, has been operating cars for 9 years and during the time that used cars were in service no money was made. In fact, a loss resulted. After the used cars were disposed of and new cars purchased the business prospered. The concern just mentioned now has two Ford touring cars, a seven-passenger Regal and a Chalmers limousine, and it is only proper management and operation of these vehicles that makes the concern the only one which shows any real profit. The others, whose business methods differ from those of Klein Bros., are making little if any money, and hence a study of the successful service and an analysis of the unsuccessful will be of benefit.

Two Owners Act as Chauffeurs.

All four cars owned by Klein Bros. were purchased new. They are operated by chauffeurs who receive $60 per month. During the winter months only three men are employed, but when the spring and summer comes five are needed. The two owners themselves act as chauffeurs. One man takes a car at 8 a. m. and stations it near the interurban terminal. He is in charge of the vehicle from that time until 5:30 at night. Between 5:30 and 7 p. m. no car is in use. At 7 another man is put in service and he remains out until 4 a. m., meeting all trains which come from other cities. A third car is in use between 2 p. m. and 1 a. m., and the fourth car, the limousine, remains in a barn waiting for telephone calls. Should a call come in for one of the touring cars, the man on the street is notified and he makes the call. If the limousine is desired, the street-man is called in to take the closed car out. The distance between the barn and the stand is short. When the four men are working all the cabs are kept out during the entire day and night.

Cars Are Stored in the Street.

The cars rarely are washed. Only when they are exceedingly muddy will one of the chauffeurs play a hose upon the body. During the winter, when three cars are used outside, they are left on the street day and night, sometimes with the top up, sometimes with it down, according to the weather. This effects a saving of $5 per month per car, for storage.

All repair work is done by the chauffeurs and twice each year the cars are overhauled, the time for this work being selected is that in which the men are not busy. During the time the man is working on a car he may be called away to drive another car.

The Fords have shown the best results, for tire cost and gasolene consumption have been low. Tires for all cars are bought at dealers' prices; gasolene is bought in quantities.

This company keeps no books to amount to anything. When a man is sent out on a job the owner is dependent upon the driver's honesty for the return of the proper fare. This money is credited to that particular driver and car. The book shows four columns on each side, one column for each car and driver. The money taken in by each car is credited to the car's account. All parts bills, tires, gasolene, etc., are charged against the car. At the end of the year the owners can tell how much each car took in and how much was paid out for maintenance. The owners claim to have made money with a rate of 25 cents per mile and $2.50 to $3 per hour, depending upon the car and passengers. The 25 cents is lowered to 20 cents in the case of special customers.

Take All Available Trade.

Much of Klein Bros.' business consists in taking men and women to nearby roadhouses. It is the only concern that will handle this sort of trade and it is because this is taken that money is made. When a party goes to some inn, the rate is raised to $3 per hour, provided the people are not regular customers. If they are customers a flat rate is charged. A book is kept and the mileage and toll to various resorts indicated therein, these being flat rates regardless of mileage.

The chauffeurs sometimes place the rate in accordance with conditions. If the run is one over a hilly section, where the time taken is long, where the tires

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receive hard usage, and much first-speed work must be done, then the rate is changed. In fact, although 25 cents per mile is the stated toll, it is only in extreme cases that this is lived up to. The cars carry speedometers, but the only reason for doing so is to check up on tire mileage in order to obtain adjustments when necessary.

This concern has made money. Why? No storage; any class of trade taken; cars on the streets all the time; chauffeurs do the overhauling; Ford cars do most of the work; tires bought at dealers' prices; all trains are met; only rent paid is for a small barn which houses one car. The rent for this is about $4 per month, but it is included in the rent paid by the owner for his living quarters, for he lives adjacent to the barn.

One other company, which lost money, maintains a large garage, which can accommodate fifty cars, a large repair-shop, and an exceedingly well-stocked supply store. Six used cars were purchased. These are a Welsh, $1,000; Winton, $600; Atlas, $300; Chalmers, $700; Zimmerman, $500, and Amplex, $600. The drivers for these cars are taken from the repair-shop. The system is as follows:

Taken Off Repair Job to Drive.

Six men are employed in the shop and whenever a call comes in for a cab a man is taken from a job and sent out with the cab. The taxicab account in the ledger is charged 1 cent for every minute the man is out. The six men receive from 25 to 40 cents per hour and are used either in the shop or as drivers, as the case may be. The cars are always kept in the garage and are charged $5 per month each for storage, and, in fact, are treated as ordinary cars. All repair work is charged to them at the regular rate of 60 cents per hour, all tires at customers' prices, gasolene at the retail price, etc. The cars are credited with the toll money in a general account headed "Taxicabs" and debited with everything necessary for their operation at retail prices. Washing at $1 is included. The cars are overhauled in the shop whenever such work is necessary whether the men are busy or not.

Lost Money on "Waiting Time."

The rate charged by this company is 50 cents per passenger per hour, not including the driver. Thus a five-passenger car with room for four passengers will cost $2 per hour. By the mile, 25 cents is the charge. Special runs were made last summer to nearby points, with known mileage, at a flat rate, but money was lost waiting to fill the cars. Often a trip had to be made with one passenger. Charge accounts were kept and 10 per cent. of them were bad. Day and night service was given and at the end of the year the taxicab account showed a loss of $2,742, minus the value of the cars at present.

It appears that this concern has not been keeping its cars busy enough, by passing up some of the trade which ordinarily would bring much money. The Klein brothers pay no storage charges, by leaving the cars in the street all night; here $5 a month is charged to each car. Taking the men out of the shop would be a good scheme provided the men were idle when a call came in, but this was not always the case. So instead of keeping the man on the repair job and having him earn the difference between 60 cents per hour and his wages per hour, he was sent on a call which often was for only a mile or so and the toll very small.

One of the other concerns, owned by Frederick Hoagland, has about broken even on the taxicab business in the past year. This company has a large garage and also carries a line of oils, greases and parts. The cars used are new, three of them being five-passenger Reos and one a seven-passenger Apperson car.

Four chauffeurs are employed and each receives $60 per month. Day and night taxicab service is given, but no cars are kept on the street. The garage depends upon outside calls for work. The men work from noon to 6 p. m. one day and from 7 a. m. until midnight the next. All calls coming in between midnight and 7 a. m. are taken by the owner.

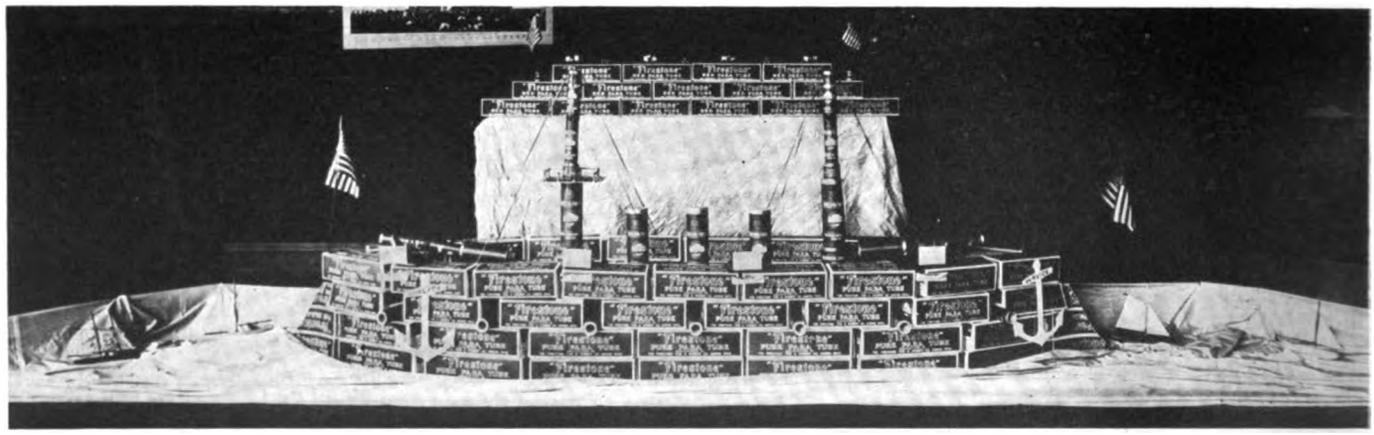
Depend on Drivers' Honesty.

The regular rate that is charged is 20 to 25 cents per mile and from $2.50 to $3 per hour, depending upon conditions and the customer. The chauffeurs' honesty is depended upon, for no check is kept on the mileage for the trip.

A looseleaf ledger is kept for these cars, a separate account being kept for each one. The cars are charged with storage, washing, gasolene, oil, etc., at cost. All minor repair work is done in the shop, but overhaul work is left to the dealer in Chicago.

It will be noted that the unsuccessful taxicab companies use large cars, not one of them being a Ford, which has proved to be excellent for this sort of work.

Firestone's Fleet Is Almost Ready for Battle



The Firestone Tire & Rubber Co., Akron O., is supplying to its branches and agencies the plans for these battleship windows—The battleship is made of tube cartons and accessories; the water is blue cloth, wrinkled to represent waves—The fort in the background is made of empty cartons and the cliff on which it stands is of white cloth—On the life boats were such signs as "Hook on in case of trouble"—On the sails were such mottos as "Never an Off Season"—Fitting nicely into the warlike display were fake telegrams from all the crowned heads of Europe, stuck on the windows and elsewhere—The display is an excellent illustration of how a merchant may make capital of the doings of the day

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Dealer's Legal Status

Supreme Court of United States the Highest Court in the Land —Patent and Copyright Suits Must Come Before It— More Than 75 District Courts.

By Geo. F. Kaiser

Dealers are naturally interested in the various court decisions, in so far as they relate to difficulties arising among those in the trade.

When the Court of Appeals of New York State hands down an opinion in one case, however, and the Supreme Court of New Jersey passes on the second, while the third opinion is possibly rendered by the United States Supreme Court, the dealer begins to wonder a little about the formation of our court system, why there are so many courts, and what cases they are respectively entitled to decide.

Let us suppose that John White is a manufacturer of magnetos, with his principal office in New York city. If he should have any disputes with any other residents of New York state, and desires to bring suit, the case would naturally be tried by one of the New York courts, the particular court chosen being determined according to the amount involved.

Cases Should Be Tried in Courts Where the Sued Party is a Resident.

If, on the other hand, he desires to sue a resident of the state of New Jersey, Connecticut or some other near-by state, the courts of the particular state in which that person lived would be the ones in which the case would come up for trial.

In the event of the person whom he desires to sue coming to New York state, a summons might be served upon him there. In that instance it might be tried in New York.

Whenever a case comes up where the parties to it are residents of different states, even though the suit has been started in some state court, it may nevertheless be transferred to the United States Court, as it is deemed to be more equitable that a case be tried there than in the home state of one of the parties to the suit.

Some law suits can only be started in the United States courts and the state courts cannot deal with them at all, as for example, where a case arises under the patent and copyright laws.

The United States court system is composed of the Supreme Court, which is the highest court in the whole country, the Circuit Court of Appeals, of which there are nine, and the various District Courts, the Court of Claims, the Court of Customs Appeals and the Commerce Court.

Cases Usually Started in District Courts in Any One of the States.

Cases are usually started in the District Courts in one of the states. There are about 75 District Courts in the United States, each state being divided into one or more districts, according to its size and population; for example, in New York there are four District Courts, the Northern, Eastern, Southern and Western, respectively. Suit may be started in the United States Court in a great many different cases.

In some cases, when the United States is a party, or a state is a party, or when it is brought for infringement of letters patent, etc., it must be brought only in the United States Court.

Decision of Circuit Court of Appeals Final in a Number of Particular Cases

The intermediate courts between the Supreme Court and the District Courts, which are the low courts, are the Circuit Court of Appeals. There are nine Circuits in the United States, or, in other words, nine branches of the Circuit Court of Appeals. These courts review final decisions in the District Courts, except where such appeals may be taken direct to the Supreme Court, which are in the most instances cases involving the jurisdiction of the court, or the construction and application of the United States Constitution, etc.

Where the jurisdiction of the court is dependent entirely upon the fact that the parties are citizens of different states, or of foreign states, cases arising under the patent and copyright laws, revenue laws, criminal laws, and the admiralty cases, the decision of this court is final, except that it may certify questions of law to the Supreme Court if it so desires, and the Supreme Court may then review the whole case as if it had been carried there by appeal.

The Supreme Court of the United States is the highest court in the country. It has a chief justice and eight associate judges, any six of whom constitute a quorum and are able to hear and decide cases brought before it.

The Supreme Court has exclusive jurisdiction in all cases where ambassadors, public ministers, etc., are parties, and also of cases where a state is a party, except where the suit is between the state and its own citizens, or those of some other state or aliens.

In some cases appeals may be taken direct to the Supreme Court from the District Courts, where there is a question of constitutional law involved. But ordinarily, cases come to it for final decision from the Circuit Court of Appeals.

—

Gasolene Stored Adjacent to Residence A Nuisance in the Eyes of the Law.

A decision was rendered some time ago in the Circuit Court of Kent County, Mich., which may have a far-reaching effect inasmuch as the court held that the storage of a large quantity of gasolene within a few feet of a residence is a private nuisance.

The case was the one of Arthur W. Wittemore, who owns and occupies a house and lot adjacent to the Baxter Laundry Co., in Grand Rapids, Mich. The Baxter company, which does a dry cleaning business, uses about 15,000 gallons of gasolene per year, and prior to the filing of the bill in the case had placed in its yards two large steel tanks of the capacity of 10,000 gallons each and had commenced excavating for the purpose of having these tanks placed in the ground in the northwest corner of its premises, which was the farthest possible point on its premises from its buildings and immediately adjoining Wittemore's property, the nearest tank being about 11 feet from his property. Wittemore filed a petition for a temporary injunction, claiming that the storage of the gasolene so near to his property would be a private nuisance.

In the lower court it was held that it was a private nuisance. The Baxter company appealed to the higher court, which upheld the verdict brought by the lower court.

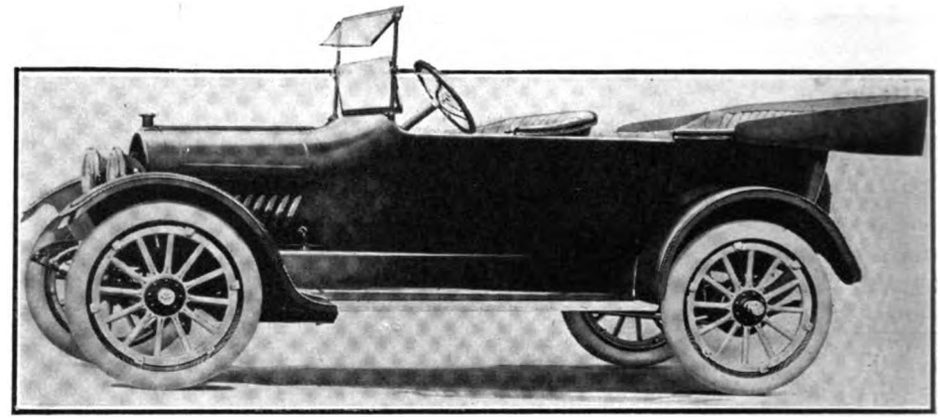
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Krit for 1915 Enlarged and Price Lowered $55

Cabriolet Model Added to Sell at $1,295.

Center Control Now Feature of All Models.

All Models Have Full Electric Equipment.

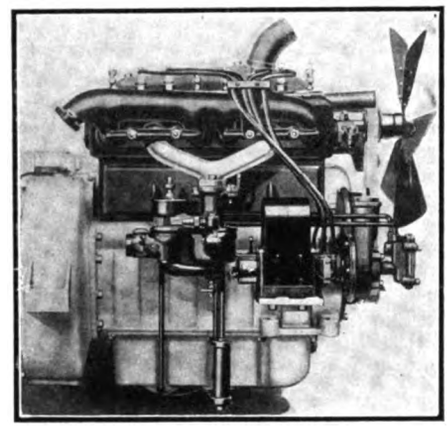


Without materially altering body lines, the touring car has been made roomier in all directions. The price is $995 with full equipment, including North East electric lighting and starting system

The prices of the 1915 Krit models have been materially reduced. Continuing the same general attractive outward appearance as in 1914, they have larger and more roomy bodies, a more powerful motor, better and most complete equipment and a number of detail chassis alterations leading to greater efficiency.

The price of the roadster and touring car models has been reduced from $1,050 to $995, with full electric equipment for cranking and lighting, one-man top, non-skid rear tires, additional instrument board units. Besides these two body styles, the Krit Motor Car Co., Detroit, Mich., has added a cabriolet type to meet a growing demand for such an all-weather machine. This is to sell for $1,295. The special touring car and roadster which were well received last season have their successors in the 1915 line also. In either roadster or touring car form, the special sells for $1,070, with five wire wheels, leather faced seat covers and optional color, in addition to the equipment with which the regular models are fitted.

While the body lines are substantially the same as they were, a trifle has been added to the width, while the touring car has been increased 4 inches in length to give more room, most of which has been accorded the front seat. Another distinctive touch which adds to the effect of the streamlines is the crowning of the fenders.

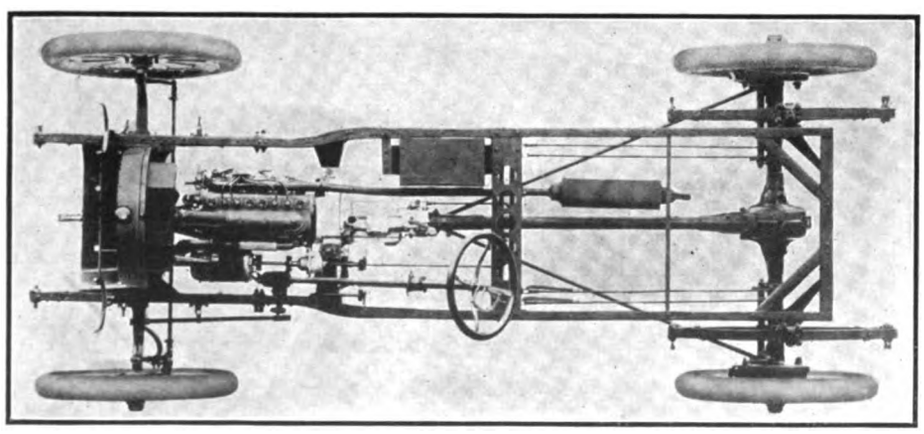


The power of the motor has been augmented by increasing valve sizes, lightening pistons and redesigning cams

In the motor, a new oiling system has been incorporated which combines the flywheel pump system which was heretofore used with a pump circulation. It is a combination of force feed and splash. In the new arrangement, the reservoir which forms the lower portion of the crankcase is open at the top with the exception of four troughs, one beneath each connecting rod. The oil is positively forced from the reservoir to each of these troughs by a gear pump attached to the front end of the magneto shaft. The rods dipping in the troughs cause a splash, lubricating all parts of the motor, and, as each trough is supplied independently by a lead from the main oil manifold running along the inside of the crankcase, the lubrication of each cylinder is assured, whether running on the level or on any kind of grade. The flywheel system which was heretofore used alone, now is the secondary supply.

An important change has been made in the electric equipment, a North East single unit system replacing that fitted last year. This new motor-generator is 38 pounds lighter than the unit heretofore used. It is mounted on the left forward side of the motor on a bracket integral with the crankcase. This unit connects to the crankshaft through a shaft running back to a sprocket which in turn connects with another sprocket on the crankshaft and between its rear end bearing and the flywheel. The whole chain mechanism is completely housed within an integral extension of the flywheel housing. The shaft running from the electric unit to the upper sprocket is fitted with two leather universal joints. The ratio between the motor-generator and the crankshaft is 2.96 to 1.

The battery is a 120 ampere-hour Willard and is located to the right of the gearbox inside the frame and under the front floor boards. The new cranking system turns the engine at 175 revolutions. On test, it rotated the shaft for



On the single chassis three body types are mounted—roadster, touring and cabriolet. The North East motor-generator unit on the left of the engine is 38 pounds lighter than the former unit

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51 minutes with a fully charged battery. The system is a 12 volt, two-wire one.

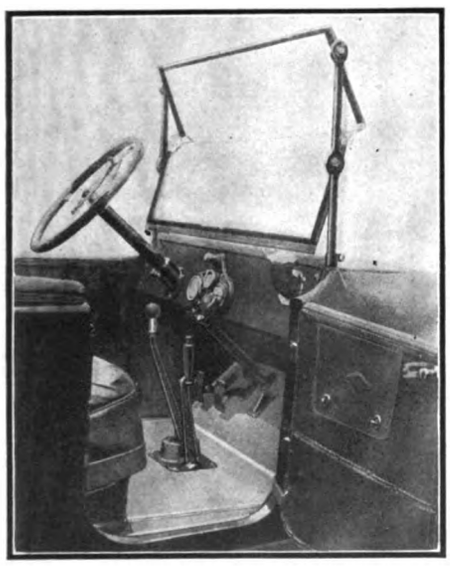
Some 25 per cent has been added to the power of the motor by increasing the valve diameter from 1¼ inch to 1⅜ inches; by lightening the pistons, each of which carries three concentric rings; and by redesigning the camshaft to allow for wider valve opening and closer tappet adjustment.

Three chassis changes are of special note. First of these is the shifting to center control from the former left position of the levers—the Krit company has always advocated left drive since its inception in 1909. Second is the adoption of fore and aft steering mechanism to replace the cross type.

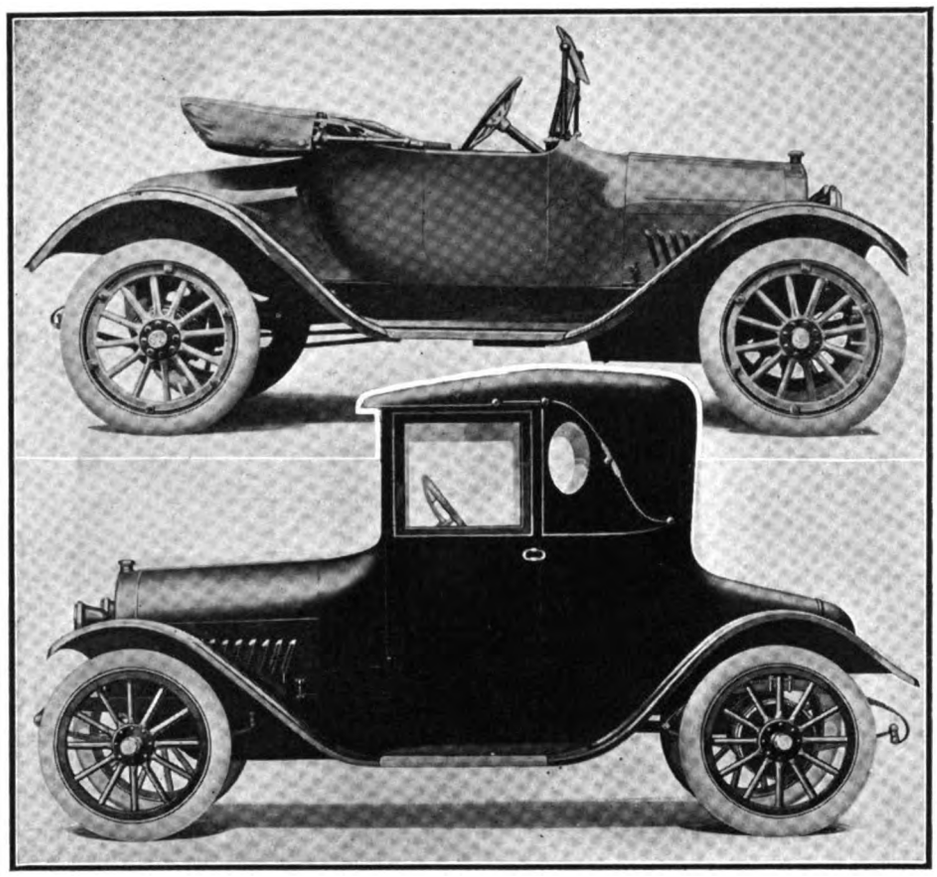
The Krit motor, which is of the block cast type with L-head cylinders, has a bore of 3¾ inches and a stroke of 4 inches. giving it an S. A. E. formula rating of 22.5 horsepower, although, due to the high speed design with light reciprocating parts, the engine will develop close to 30 horsepower on the block. Its maximum power output is attained at a crankshaft speed of about 2,000 revolutions, although it can be run as high as 3,100 revolutions. Ignition is by Bosch high tension magneto, and the carburetter is a Stromberg.

One distinctive feature of the Krit motor is the mounting of the crankshaft on two annular ball bearings of S. R. O. make.

The crankcase, gearcase, oil reservoir, water pipes and intake pipe are of cast aluminum, and the total weight of the engine with magneto and carburetter is 276 pounds. The complete gearset weighs 73 pounds, and the electric unit 45 pounds, bringing the total weight of the unit power plant up to 394 pounds.



The control levers have been shifted from left to center. Left drive has been used on the Krit since 1909



The Krit standard roadster sells for $995. The cabriolet is a new model and sells for $1,295 with electric lighting and starting

The drive from the motor is through a saw-steel multiple-disk clutch which is within the flywheel. The housing of the latter is connected by a pipe to the oil reservoir, so that the clutch runs in a bath of oil. The drive shaft in the gearset is mounted on annular ball bearings.

Except for the few changes in the chassis which have been enumerated, it remains of the same general construction as it has from the beginning. The drive to the rear axle is through a vanadium steel drive shaft enclosed within a torque tube and fitted with a Spicer universal joint at its front end.

The axle is of the semi-floating type and Hyatt roller bearings are fitted, with a ball thrust bearing on the drive pinion. The brakes are of the usual internal expanding and external contracting type acting upon 10 by 2 inch drums. Rear springs continue to be of the elliptic type, underslung from the axle. Their rear ends are of the scroll form.

The gasolene tank under the cowl and hidden by the leather-covered instrument board, through which projects the filler pipe, was a feature of the 1914 Krit, and is retained without change for 1915. There is capacity for 10 gallons for direct use. A new feature, however, is the grouping of all the dash instruments on a single plate which is mounted on the instrument board, containing gasolene gauge, Stewart speedometer, ammeter, switches and air control.

SALIENT FEATURES OF THE KRIT MODELS FOR 1915.

Price:	
Touring	$995
Special touring	1,070
Roadster	995
Cabriolet	1,295
Color	Blue and gray
Make of motor	Krit
Number of cylinders	Four
Shape	L-head
How cast	Block
Bore	3¾
Stroke	4
S. A. E. rating	22.5
Magneto	Bosch
Carburetter	Stromberg
Starting-lighting	North East
Clutch	Disk
Wheelbase	108
Front tires	32 x 3½
Rear tires	32 x 3½ non-skid
Wheels	Wood
Steering	Left
Control	Center
Type rear axle	Semi-floating

Wire wheels and seat covers, $75 additional.

Equipment: One-man top, gasolene gauge, dash lamp, horn, tire carriers, slip cover, demountable rims, electric starter and lighter, speedometer, etc.

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RECENT DEVELOPMENTS in ACCESSORIES

Kellogg Single Cylinder Tire Pump.

A new tire pump which has but one cylinder and which embodies a number of unusual features has been brought out by the Kellogg Mfg. Co., Rochester, N. Y.; the peculiar form of the pump is shown in the accompanying illustrations. The cylinder is of large diameter, but the stroke of the piston is short. Eccentric drive from the shaft is employed; but instead of using a single eccentric and rod there are two of each, so that the thrust is well distributed and there is an unusually large area of wearing surface.

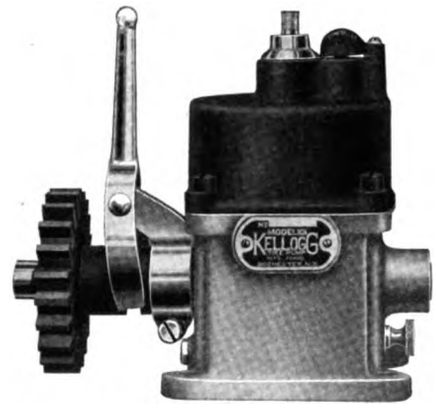
Both intake and outlet valves are of the poppet type. Particular attention has been given to the lubrication problem, owing to the danger of getting oil into tires along with the air. A baffle plate prevents the splashing of oil, which is contained in the lower part of the casing, upon the piston and cylinder walls. The piston gets its lubrication from a felt pad which is compressed at each down stroke and gives out just enough oil to keep the rings properly lubricated. The eccentrics and bearings get their oil by splash. The makers state that it is impossible to spray any oil into the air pumped.

Gray iron is used for the cylinder, and the bore is ground and polished. The piston is fitted with two rings. The crankcase is a smooth die casting. Connecting rods are of bronze and are placed one on each side of the guide which keeps the piston in position and prevents side strain. This feature is effective in preventing unequal wear on the cylinder walls and piston rings. Each pump is supplied with 15 feet of tubing and a pressure gauge. The list price is $15.50.

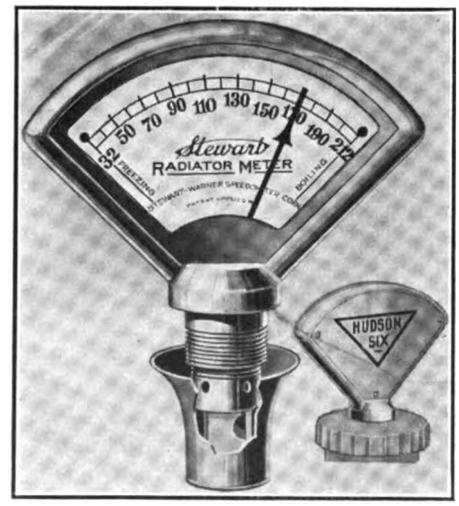
Improved Stewart Radiator Meter.

A difference of a radical nature exists between the latest radiator meter manufactured by the Stewart-Warner Speedometer Corporation, Chicago, and the same company's previous model. The general appearance of the meter is that of a sector surmounting the radiator filler cap, the face turned toward the driver having a scale over which a pointer swings, indicating the temperature of the water in the radiator.

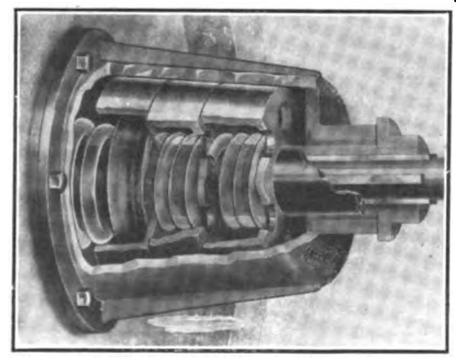
The pointer is actuated by a thermostat, and herein is the new feature. The thermostat bar extends into the water in the radiator and is intended to be in the water at all times, which was not the case with the older model. The pointer is wide and easily seen, and even if the figures on the dial cannot be seen, on account of a poor light, for instance, the angle of the pointer indicates the temperature quite accurately.



A special lubrication system keeps oil out of the air line of the new Kellogg single-cylinder tire pump



The angle of the pointer on the Stewart radiator meter indicates the temperature if the figures cannot be seen



Three tandem cones, engaging successively, give a gradual and smooth action. An oil bath lubricates the surfaces

The list price of the meter is $5. A special model is made for Fords, differing from the standard model only in that it is mounted on a Ford filler cap; this model lists at $5.25. A finishing touch can be added to the meter by attaching to the front side a triangular plate bearing the name of the car in the form adopted by the maker. These plates are made for all standard cars and cost 25 cents each.

Clutch With Multiple Cones.

A clutch in which the engaging surface is divided into three parts by the use of cones of graduated sizes has been placed on the market by the Automatic Gas Motor Co., Indianapolis.

The clutch has three cones set tandem within a tapered casing. The inner surface of the casing forms the frictional surface with which the three cones engage when power is being transmitted. The casing is bolted to the flywheel and forms the driving member of the clutch, while the cones are mounted on an extension of the shaft to be driven. The cones are normally pressed toward the smaller end of the tapered casing by strong helical springs and are thrown out of engagement by being moved against the springs, as in the case with the ordinary type of cone clutch. Longitudinal movement is permitted by a splined shaft. The cones engage one at a time, so that starting is easy and gradual. The friction surfaces are metal to metal and the clutch works in an oil bath, the film of lubrication preventing wear and enhancing smooth action. A ball bearing collar takes the thrust of the coiled springs.

Among the advantages claimed for the clutch are compactness and small diameter, tending to reduce spinning, a powerful engagement without tendency to grip suddenly, ability to transmit full power under all conditions, absence of leather, fabric, cork or rubber components and simplicity of construction

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In Salesroom and Garage

The Auto Kraft & Garage Co. has leased a three-story structure at the rear of 76-87 Forest avenue East, Detroit, Mich. The first two floors will be devoted to storage; the third is equipped with machinery for repair work. Accessories and supplies, including tires and rims, will be stocked.

H. E. Kelly, for the past four years state representative of the Studebaker Corporation in Oklahoma, has resigned that position and formed the Kelly Motor Co. in Oklahoma City. The new company will be Studebaker headquarters for Oklahoma.

C. E. Blaber, Osterdock, Ia., and Charles Brown, of Colesburg, have formed a partnership and purchased property in McGregor, Ia., where they will engage in the motor car business. They have the agency for the Buick and Oldsmobile.

The Hudson-Pogue Tire Co. has succeeded to the business of the Pogue Auto Supply Co. at 5863 Delmar boulevard, St. Louis, Mo. In addition to the distribution of Diamond tires, the company will stock accessories.

The Saxon Motor Co. has located its garage and offices at 707 North Second street, Clinton, Ia. It has the agency for Saxon and Vulcan cars for Clinton, Jackson and Cedar counties.

Warnke Bros., of Sterling, Ill., has let the contract for the erection of a garage on South Frederick street; it will include salesrooms and an oxy-acetylene welding department.

To distribute the Stutz car, the Stutz Automobile Co. has located at 3474 Olive street, St. Louis, Mo. R. W. Immasche, the manager, formerly managed the Stutz Motor Sales Co.

Walter S. Adams, Frank E. Card and H. R. Brown have purchased the Central Iowa Motors Co., in Des Moines, Ia. The company is state distributer for the Hupmobile.

The Dugar Motor Car Co. has let the contract for a $25,000 garage in Marquette, Mich. It will be a two-story structure, equipped for charging electric cars.

The Central Automobile Supply Co. has opened a salesroom for accessories, supplies and used cars and repairing at 5031-33 Delmar boulevard, St. Louis, Mo.

Independent Garage is the style under which William Koehler and Frank Zettler will engage in the garage business on West 2nd street, Marshfield, Wis.

The Birmingham Motor Co. is adding an accessory department to its plant at Avenue C and 21st street, Birmingham, Ala. Supplies will be stocked.

G. C. Deen has opened a garage and supply house at 214 East Sixth street, Austin, Tex., in the premises previously occupied by the Texas Garage.

The Livingston-Hinkle Rubber Co. has been formed in Columbus, O., to handle tires and accessories. It is located at 166 Gay street.

The Enosburg Falls Garage, Enosburg Falls, Vt., has added a repair department and will stock accessories. E. E. Smith is the manager.

A new vulcanizing establishment has been opened at 20 East Town street, Columbus, O. It will be known as the Red Letter Tire Co.

The Fleming Motor Co. has succeeded the Rambler Distributing Co., 512 Douglas street, Sioux City, Ia. J. A. Fleming remains manager.

J. W. Leavitt & Co., Seattle (Wash.) distributers of Overland cars, has opened a used car department; it is in charge of L. J. Kearns.

J. A. Thompson has opened a garage in the Merritt building, Kewanee, Ill.; he has the agency for Velie and Chevrolet cars.

The General Garage has opened for business on First South street, Salt Lake City, Utah; it has accommodations for 200 cars.

The Jawer Ford Automobile Supply & Accessory Depot has been opened at 2729 North Broad street, Philadelphia, Pa.

A new Oakland branch has been opened at 1840 South Michigan avenue, Chicago, Ill. E. J. Kilborn is the manager.

The Howard Automobile Co., Pacific Coast distributer of the Buick, has opened a branch in Oakland, Cal.

J. J. Martell has sold his interest in the Dixon Auto Garage, Dixon, Neb., to William Le Strange.

Elbert Ferrell has reentered the motor car supply trade at 2413 Hewitt avenue, Everett, Wash.

R. W. Bowden has been appointed Ford agent at Granbury, Tex.

MOTOR CAR AGENCIES RECENTLY ESTABLISHED

Place	Car	Dealer
Angola, Ind.	Haynes	Hendry & Elston
Archbold, O.	Haynes	Haynes Auto Sales Co.
Atlanta, Ga.	Haynes	Pegram Motor Co.
Blackwell, Okla.	R-C-H	J. D. Winfield
Boston, Mass.	R-C-H	D. Houston
Buffalo, N. Y.	R-C-H	Geo. C. Barone
Bridger, Mont.	Haynes	Dowdle & Hough
Canton, O.	Lozier	The Canton Buggy Co.
Cedarville, O.	Allen	Magley Bros.
Clifton Forge, Va.	Haynes	W. G. Mathews
Clinton, Ia.	Vulcan	Andrew Payson
Clinton, Ia.	Saxon	Andrew Payson
Charleston, W. Va.	Haynes	Wm. Hoferer & Son
Columbus, O.	Empire	S. W. Schott
Columbia, S. C.	Haynes	The Haynes Motor Car Co.
Columbus, O.	Pierce-Arrow	Broad-Oak Automobile Co.
Columbus, O.	Saxon	Broad-Oak Automobile Co.
Columbus, O.	Chalmers	Broad-Oak Automobile Co.
Columbus, O.	Cadillac	Curtin-Williams Auto Co.
Columbus, O.	Crescent	Craighead Motor Sales Co.
Columbus, O.	Mitchell	G. E. Thomas Co.
Columbus, O.	Oakland	Oscar Lear Motor Co.
Columbus, O.	Detroit	F. E. Avery & Son
Columbus, O.	Packard	F. E. Avery & Son
Corydon, Ia.	Haynes	Wayne County Auto Co.
Danville, Conn.	R-C-H	John P. Agan
Dayton, Wash.	Haynes	W. K. Bloome
Des Moines, Ia.	R-C-H	Holsman Sales Co.
Detroit, Mich.	R-C-H	E. W. K'Burg
Easton, Pa.	Haynes	Keifer & Steele Motor Co.
Elizabeth, N. J.	R-C-H	Franklin Auto Co.
Fulton, N. Y.	R-C-H	Geo. M. Ives
Fremont, Neb.	Haynes	Leslie L. Whitcomb
Gig, Va.	Haynes	Chas. J. Hitchens
Grinnell, Ia.	Haynes	W. P. Watson
Harrisburg, Va.	Haynes	Kavanaugh Garage
Huntington, W. Va.	Haynes	Walter L. Robinson
Jackson, Mich.	R-C-H	Weber Bros.
Kansas City, Mo.	Chandler	The Chandler Six Co.
Leemors, Cal.	Haynes	Valley Garage
Macon, Ga.	Haynes	Geo. R. Napier
Marietta, O.	Ford	The Marietta Motor Car Co.
Malvern, Ark.	Maxwell	J. W. Alexander
Meridian, Miss.	Haynes	John H. Semmes Motor Co.
Minneapolis, Minn.	R-C-H	Choate Auto Co.
Monterey, Va.	Haynes	Kyle Garage Co.
Newburg, W. Va.	R-C-H	J. T. Logsdon
New London, Wis.	R-C-H	New London Hardware Co.
North Yakima, Wash.	Haynes	Central Auto & Supply Co.
E. Norwalk, Conn.	R-C-H	Reddy & Ayers
Northampton, Mass.	R-C-H	T. J. Collins
Peoria, Ill.	Haynes	Automobile Exchange of Peoria
Philadelphia, Pa.	R-C-H	Colonial Motor Co.
Pontiac, Ill.	Haynes	J. P. Cook & Co.
Portland, Ind.	Haynes	Fred Foltz
Princeton, Ill.	Haynes	Alpaugh Bros.
Princeton, W. Va.	Haynes	Princeton Motor Garage Co.
Ramsey, Ill.	Haynes	L. F. Strobel
Rochester, N. Y.	R-C-H	A. V. Hart
Savannah, Ga.	Haynes	Arthur H. Hadden
Schuyler, Neb.	Haynes	Douglas Grotluschen
Spencerville, O.	Haynes	American Motor Sales Co.
Spokane, Wash.	Lozier	Moylan-Reilly Auto Co.
Spokane, Wash.	Chevrolet	Moylan-Reilly Auto Co.
Springfield, O.	Allen	The Eaton Motor Service Co.
Stockton, Cal.	Haynes	White Garage
Swedesboro, N. J.	Haynes	F. F. Hunter
Toledo, O.	R-C-H	E. W. K'Burg
Toledo, O.	Haynes	Wm. Wheaton
Walla Walla, Wash.	Haynes	G. G. Sohneller
Washington, D. C.	Haynes	Briscoe Sales Co.
Watertown, N. Y.	R-C-H	A. E. Lawyer
Wheeling, W. Va.	Overland	The Auto Sales Co.
Wilmington, Del.	Haynes	Delaware-Touraine Co.
Vallejo, Cal.	Haynes	Acme Garage, Inc.
Valparaiso, Ind.	Haynes	Wheeler Elam Co.

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Advanced Maintenance

STRAIGHTENING THE RUNNINGBOARD IRON

By George Fernwell

It should be obvious from the foregoing that a runningboard bracket deformed at a short segment of the curve can be readjusted only with fair results if the work is done without making the deformed part red hot.

An example is shown in Fig. 13 in which by carefully noting the appearance of the deformed curve and also noting the increased height of the bracket at the point A from the floor line as compared with the normal height of the corresponding bracket on the uninjured side of the chassis, it may be determined that the deformation of the curve extends practically the entire length of the curved section from A to A1.

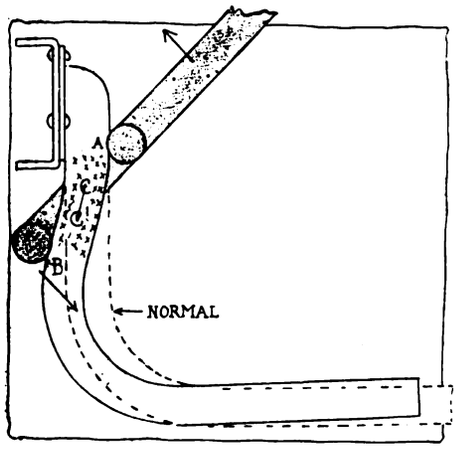


Fig. 12—A runningboard bracket deformation which necessitates heating at C and C1 to avoid risk of breaking the bracket or twisting the frame

In this instance it is not so necessary as in the previous one, that the bracket be heated, providing the bending irons are applied with good judgment so as to as nearly as possible reverse the action of the blow or collision which caused the deformation. It is necessary, however, that the assistant should be strong enough adequately to resist with the bending iron, Fig. 13, the considerable leverage which must be exerted by the leading workman handling the bending iron E.

If it should be decided to make the deformed curve red hot, the same rule as before holds good; heat neither more not less than the full length of the deformed segment.

It must be borne in mind in the readjustment of a deformed runningboard bracket that in addition to the adjustment of the bracket so that the straight member shall be practically level, it is also desirable that there should be no considerable deviation from the original distance from a line perpendicular with the face of the chassis frame to the center of any one of the bolt holes provided in the horizontal part of the bracket to receive the step bolts which hold the runningboard in place, (Fig. 15).

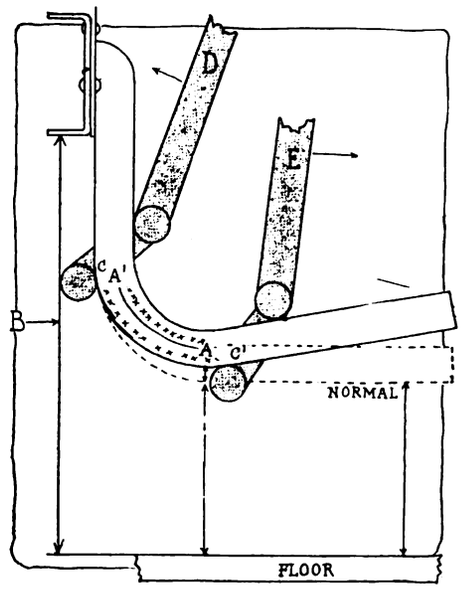


Fig. 13—If heat is used to facilitate the work it must be applied from A to A1. Iron E does the bending while iron D prevents bending above C

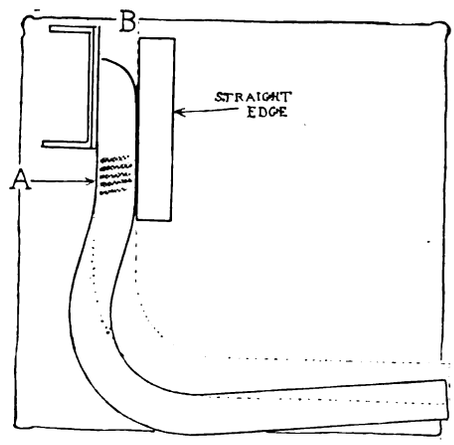


Fig. 14—Straightening commences at A and care must be taken to use a straightedge to make sure the bracket is not brought out too far at any point

Such deviation is apt to occur if in readjusting the deformed curve it is heated at too short or too long a segment or too short or too long a bend at the wrong place in doing the work cold.

The result would be that the runningboard would not be parallel with the chassis, which while of itself undesirable in appearance, would also affect the alignment of the fenders both front and rear.

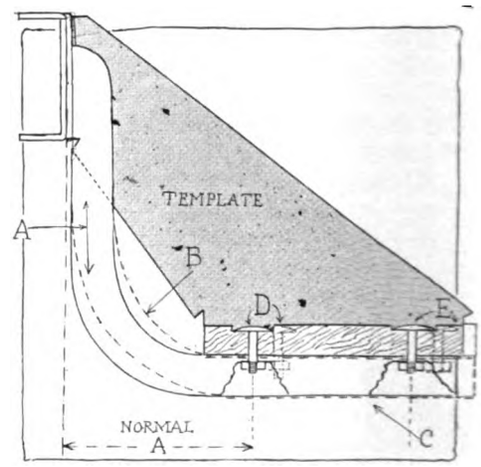


Fig. 15—Poor judgment in using bending irons may result in too flat a curve, bringing the bolt holes out of register with the holes in the runningboard

Fig. 14 gives an example of a runningboard bracket deformed at the curve and also at the perpendicular portion near the chassis frame. While the deformation of the curve is actually similar in extent to Fig. 12, it does not appear so at first glance, owing to the comparatively slight deviation from the horizontal of the straight portion of the bracket. The deformation at A would become more apparent after the adjustment of the portion B to its normal perpendicular outline.

To carry out this repair no attempt should be made to adjust the deformed curve A until the portion B has been completely straightened. To perform

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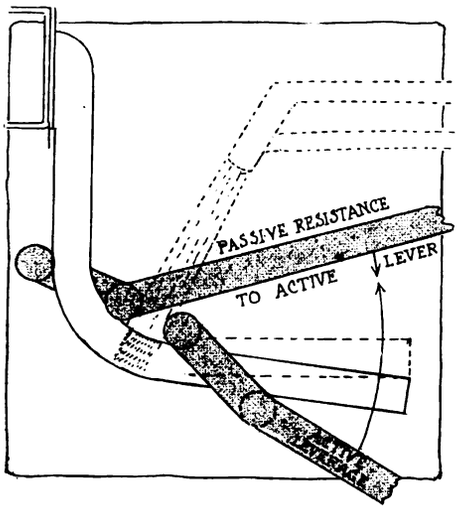


Fig. 16—The best work can be done by removing the runningboard. The lower iron does the bending and the other offers passive resistance while heat is applied

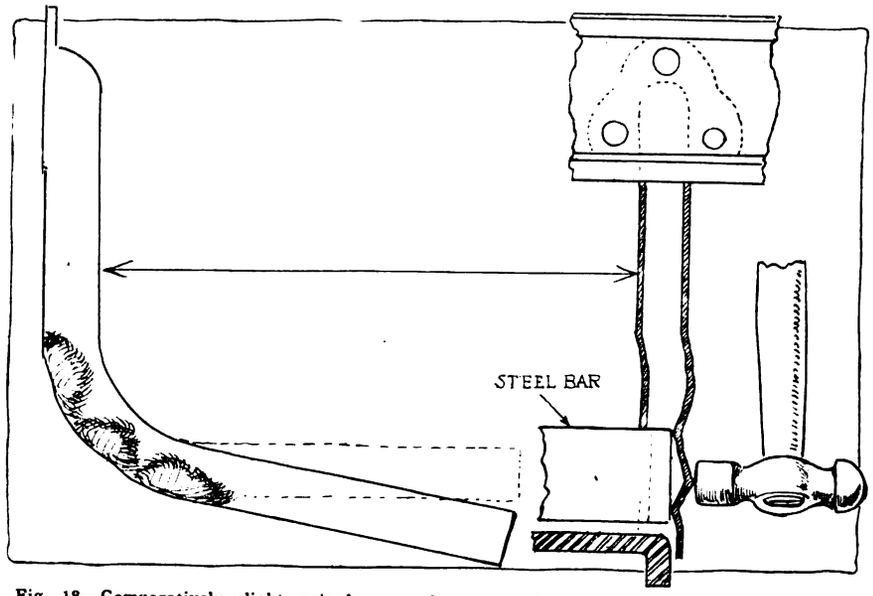


Fig. 18—Comparatively slight wrinkles may be corrected in a channel bracket by using a hammer and placing the end of an iron bar back of the work. This should be done alternately with applications of the bending irons or jacks

this part of the repair it may be seen by referring to Fig. 12 that only one bending iron can be used and any leverage exerted with the latter will, if the work is attempted cold, be applied to a considerable extent to the frame channel or side member of the chassis, tending to twist the channel.

While under certain conditions, such as the bracket in question being located close to a cross-member, there might be no apparent injury to the frame or loosening of the rivets, it is decidedly bad practice to attempt a repair of this nature without the assistance of heat.

A difficulty to be anticipated in straightening the perpendicular portion of the bracket B. Fig. 12, is that owing to the possibility of the fulcrum pins of the bending irons not being applied at exactly the right location, or to not exactly the right portion of the bracket being made red hot, an effect similar to Fig. 20 may be produced when proceeding with too much haste. It is advisable that the straightening out process proceed by degrees, with frequent applications of a straight edge to insure that no deviation or projection from the perpendicular line shall have commenced which would result in an appearance similar to Fig. 20.

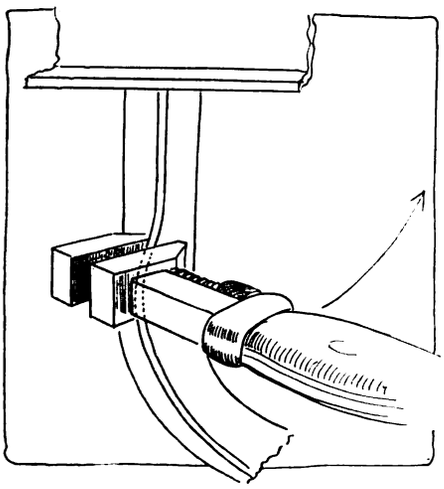


Fig. 17—A monkey-wrench is useful in bringing the webs of channel brackets into shape while bending irons are being used to correct general form

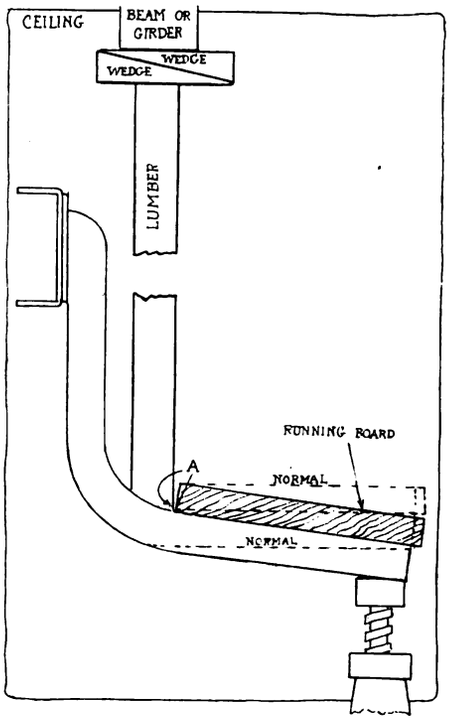


Fig. 19—A downwardly bent bracket may be brought back without removing the runningboard by applying a jack under it and using timber and wedges above

The frequent application of the straightedge should indicate any need of changing the points of application of the bending iron or the point of application of the blow-pipe flame. Fig. 14.

In the process of straightening the portion B, Fig. 12, by degrees, work should commence at the upper extremity of the deformed portion and proceed downwards. Accordingly as the application of the heat and the bending iron cause each successive segment to coincide with the perpendicular, no further heat should be applied to the straightened portion and the bending iron should be moved downwards as judgment may indicate, so as to avoid deforming the portion which may have been straightened.

Having completed the process of straightening the perpendicular portion of the bracket the general appearance of the latter will be similar to that of Fig. 13. The same general methods of course apply to readjusting the curved portion of the bracket to its normal outline.

An example is given in Fig. 19 of a runningboard bracket bend downwards instead of upwards as in the preceding

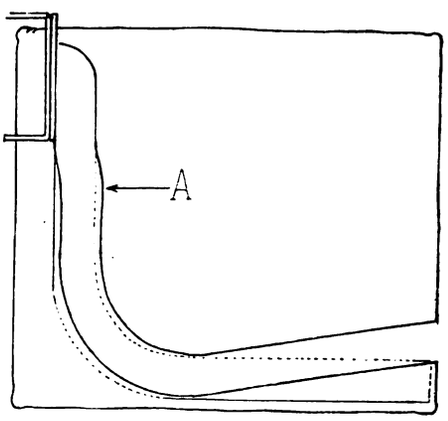


Fig. 20—At A is shown in an exaggerated way the effect of the careless use of the bending irons and failure to test the work with a straightedge

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instances. Assuming it to be inexpedient to remove the runningboard and splashguard, an effective method of adjusting the deformation requires the aid of a jack applied to the outer extremity of the bracket and a piece of straight lumber lightly wedged between the curved portion of the bracket and a convenient beam of girder at the ceiling of the workshop.

The wedging is accomplished by means of a pair of wedges having similar angles. As the piece of lumber should be wedged between the ceiling and the bracket with only the least possible force sufficient to insure a bearing, it may be necessary for an assistant to hold the lumber and wedges from falling out of place. It may also be necessary to insert blocks in the springs between front and rear axles and chassis frame member.

If the bracket should be considerably deformed, the process of raising the outer end with a jack may cause a wedging action between the inner edge of the runningboard and the adjacent lower extremity of the piece of lumber. Therefore, at intervals in the straightening process the upward pressure of the jack should be relieved, and wedges loosened to permit the lower end of the lumber to reseat itself on the bracket without excessive pressure on the runningboard.

Fig. 16 illustrates a similar instance of a deformed bracket being readjusted with the use of bending irons and the flame of a blow-pipe. It is hardly necessary to add that this method requires that the runningboard and splashguard be removed and that all possible danger from the flame of the blow-pipe should be scrupulously and constantly guarded against.

Should the running board bracket illustrated in Figs. 13 and 14 be constructed of pressed steel of channel cross section, it is possible that in addition to the curve of the bracket being deformed or opened out to a larger radius, that also the side walls of the channel will be distorted or twisted in one or more waves at or near the deformed curve, (Fig. 18).

In readjusting the deformed bracket by either method the work must be assisted while the upward pressure of the jack is being applied or during the application of the bending irons, by the use of a hammer and a suitable steel block to smooth out the waves or adjust the distortion.

Effective use for this purpose can sometimes be made of a strong monkey wrench. It should be thoroughly understood that the distortion or waves are to be smoothed out or adjusted gradually as the work proceeds. Fig. 17.

In other words, alternately straighten the distortions in the channel walls a little, and then raise the straight portion of the bracket a little by means of the jack, as has been described, or the bending irons.

It may be well here to attempt to convey the idea of what the conditions may be in an instance of the described distortion or waves in the walls of a channel section runningboard bracket.

It can in general be safely assumed that the distortion or waves or wrinkles which may be apparent do not indicate that the wall of the channel steel is stretched. Therefore if the material is not stretched it must not be caused to contract by any process of hammering with a view to removing wrinkles or waves by contracting the metal. It can usually be assumed that the areas of the segments forming the side walls of the curved portion of the bracket are the same in their distorted or waved form as the original areas of the segments referred to before the bracket was deformed at the curve. That is, upon completion of the process of restoring the deformed bracket to its normal outline the distortions, waves or wrinkles should have practically disappeared from the side walls of the channel.

All that it is required to do with a hammer or monkey wrench is to guide the distorted or wrinkled walls to their proper position.

The Week's Incorporations

Cincinnati, O.—Cincinnati Automobile Dealers; capital $2,500. Corporators—Harry C. Brunton, Edgar A. Kruse anl Frank H. Miller.

Rochester, N. Y.—J. Lawrence Hill Co.; capital $10,000; to deal in storage batteries. Corporators—J. Lawrence Hill, J. Jaffrey and J. Hill.

Haverhill, Mass.—Renton Motor Car Co.; capital $2,000; to deal in motor cars. Corporators—Lester T. Wolff, Ralph W. Renton and Francis W. Johnson.

Norwalk, Conn.—Norwalk Supply Shop; capital $5,000; to deal in motor cars. Corporators—John A. and Sarah L. Mills and W. A. Gregory, all of Norwalk.

Scranton, Pa.—Scranton Automobile Co.; capital $100,000; to manufacture motor cars. Corporators—H. R. Shaw, T. Prevost and L. G. Stark, all of Scranton.

Jeffersonville, Ind.—Jeffersonville Motor Car Co.; capital $10,000; general motor car business. Corporators—Don Williams, Fred D. Deitrich, William Kilgus and others.

New York, N. Y.—Arthur J. Myers; capital $3,000; motor car business. Corporators—Harold M. Greenbaum, William P. Roley and Augusta E. Rubin, all of 2 Rector street.

Toledo, O.—Toledo Cadillac Co.; capital $20,000; motor cars and accessories. Corporators—T. H. Towell, William H. Marlott, R. G. Morrison, F. H. Pelton and J. B. Wood.

Hartford, Conn.—Colonial Auto Co.; capital $20,000; to deal in motor cars. Corporators—William M. and Hazel O. Turnbull, both of Hartford; David A. Turnbull, Willimantic.

New York, N. Y.—Taft-Rich Auto Co.; capital $10,000. Corporators—Roland Richensteen and Royal R. Richensteen, both of Rockville Center, and Augusta Taft, 44 Ely avenue, Long Island City.

Cleveland, O.—Limou Curtain & Equipment Co.; capital $1,000; to deal in Limou curtains and motor car accessories. Corporators—A. P. Fischley, Beatrice B. Fischley, C. Albracht, Jessie L. Albracht and C. M. White.

Chicago, Ill.—Ideal Automobile Co.; capital $1,000; to manufacture and deal in machinery, motor car parts and accessories. Corporators—Archie A. Gross, S. Abrahamson, Arthur C. Dunning and Leonard L. Cowan.

Boston, Mass.—International Sales Organization; capital $50,000; motor car supplies, metal polishes and general manufacturing business. Corporators—L. Taylor and R. Taylor, both of Stamford, Conn.; E. W. Brown, Boston.

Change in Capitalization.

Detroit, Mich.—Scripps-Booth Co., from $50,000 to $100,000.

Milwaukee, Wis.—Stanley Steamer Co., from $15,000 to $25,000.

Toledo, O.—Willys-Overland Co., from $25,000,000 to $30,000,000.

Change in Corporate Title.

Milwaukee, Wis.—Stanley Steamer Co. to Bugett & Co.

Recent Fires.

Keokuk, Ia.—Gate City Motor Co.; loss $8,500.

Los Angeles, Cal.—Acme Garage & Auto Works; loss not stated.

Clinton, Ind.—Murray Garage; building anl 17 cars destroyed; loss not stated.

Des Moines, Ia.—Porter-Tidrick Auto Co.; automobile and carriage repair shop; 13 cars and 8 wagons destroyed; estimated loss $50,000

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National Series "AA" $2375



The National's Fifteenth Year of Success

¶ **Last year many dealers said,** "If we had only known what the **National** had up its sleeve, we would have waited." This year, however, if you regret that you are not a **National** dealer later in the season, you can't blame us.

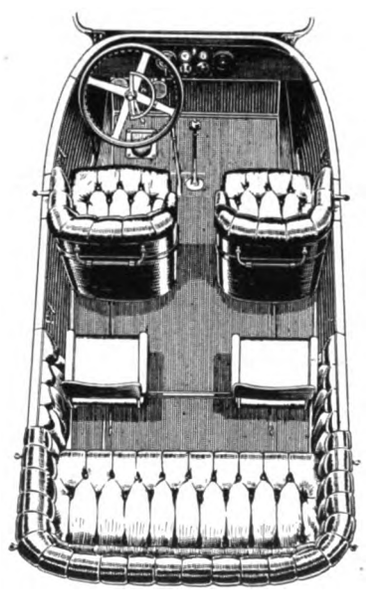
¶ **This year is destined to see** several things happen in the automobile business. The sound reputation that the **National** has been building steadily for the past fourteen successful years is going to serve dealers better this year than ever before. This **National** confidence and prestige is a good banner to get under right now. Bear in mind, that the **National** has not been an "up and down" proposition, but a consistent winner. The **National** has no bad reputation to "live down." It has a clean, convincing record for quality cars of dependable performance. In fact, the season just closed has been the **National's** best. Do you suppose the buying public is ignorant of this? Don't you realize that with the **National** you are not handicapped, but rather, are put on the vantage ground?

¶ **The new National "Aisle-way"** is the last word in style design. It accommodates six passengers, each in a comfortable, convenient seat. The extra seats are easily folded entirely out of the way and completely covered. A passageway between the front seats allows all passengers to easily change seats, also makes front seats veritable armchairs.

¶ **The easiest thing we have** to prove is that this new **National** is an excellent mechanical device. It is also without a superior in style, comfort and convenience.

Six cylinder motor, giving more than sixty horse power and better than fifteen miles per gallon. 132 inch wheelbase. Tires 36x4½

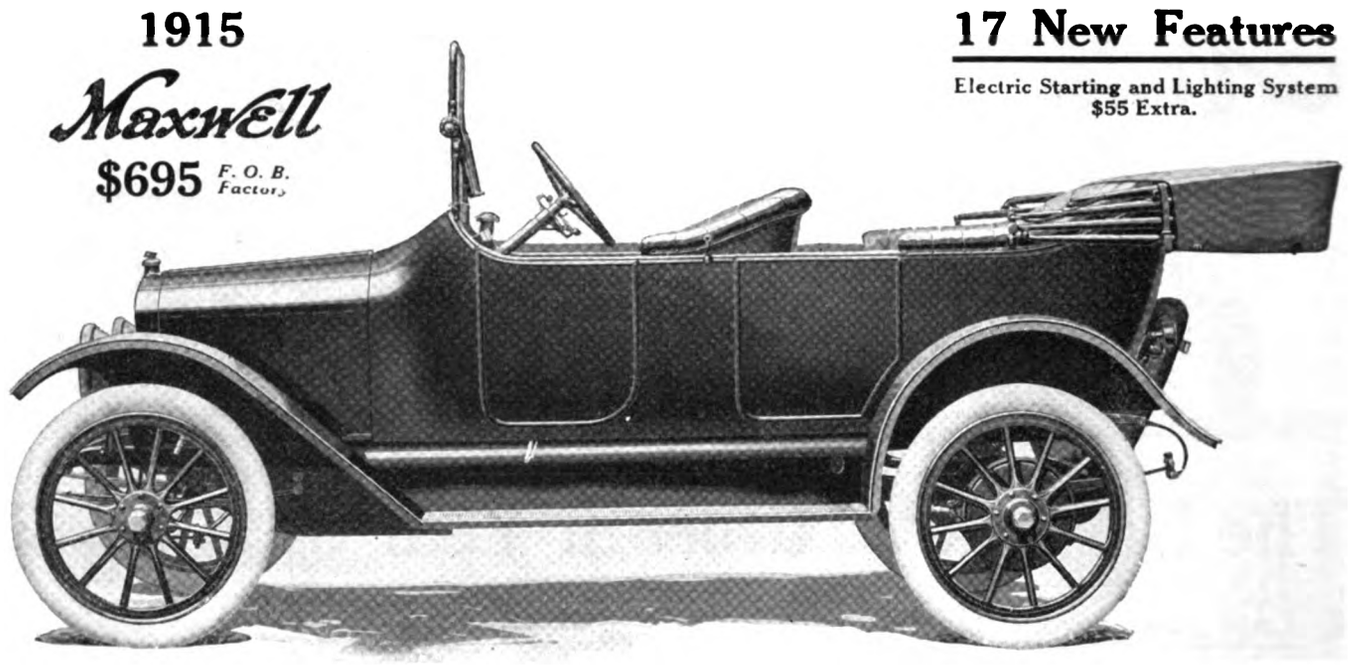
Cantilever Springs—Electric Starter and Lights—Fully equipped. National Sixes made in four types, 2, 4, 5 or 6 passenger bodies.



Six Passenger with "Aisle-way" Front seats and disappearing armchairs.

National Motor Vehicle Co., Indianapolis, Ind.

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The Maxwell Agency—A Dealer's Opportunity

The announcement of the 1915 Maxwell at $695.00 kept our mailing department working overtime opening inquiries for our agency terms. Some didn't stop to write but wired for particulars—and hundreds of dealers jumped a train for Detroit with Maxwell headquarters as their goal.

They had seen the handwriting on the wall; had recognized the Maxwell line as the real profitable one from their standpoint.

We delivered to our dealers during the last four months of the 1914 season better than 2000 cars per month—yet the demand for them was for several times this number—a tribute surely to the good qualities and stability of the car when you consider that 1914 saw the first Maxwell as now manufactured.

This year we will build 60,000 cars and have facilities for doubling that number if conditions warrant.

A Maxwell agency is a dealer's one big opportunity.

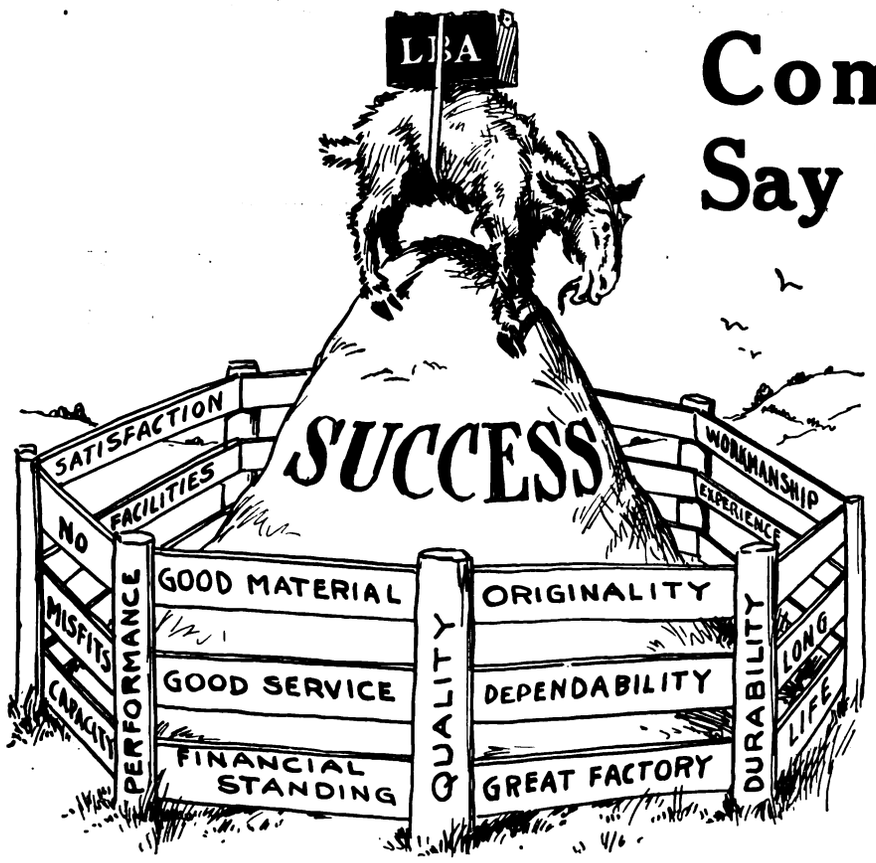
There is an unlimited demand for a car of its price—it supplies a need that until its advent remained untouched. Our enlarged output guarantees deliveries—and deliveries are what count most with you. And in addition to these things we are prepared to assist you in the way of selling and advertising beyond any of our contemporaries.

There are spots in different localities where territory is still open. Yours may be—but not for long. If you wish complete details of our agency plans address Sales Department.

Maxwell Motor Company, Inc.

Detroit, Mich.

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Competitors Say They Will Get Our Goat

And they have tried. But when they saw the fence that had to be torn down and the hill they had to climb, the undertaking appeared too strenuous to be undertaken.

THE WILLARD LBA BATTERY

LBA
TRADE MARK REGISTERED

THE WILLARD LBA BATTERY

STORAGE BATTERIES

In the esteem of manufacturer and user alike, occupy a position that's impregnable.

Behind a barrier built of something more tangible than promises and good intentions, the LBA is safely ensconced on the pinnacle of success, a position attained through years of satisfactory service.

WILLARD STORAGE BATTERY CO.

Cleveland, Ohio

New York Branch: 228-230 West 58th St.
Detroit Branch: 736-740 Woodward Ave.
Chicago Branch: 2241 Michigan Ave.
San Francisco Branch: 821 Monadnock Bldg.
Indianapolis Branch: 318 North Illinois Ave.

SERVICE STATIONS IN ALL PRINCIPAL CITIES IN THE UNITED STATES, CANADA AND MEXICO

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Within 90 Days
Jeffery Four

War is raising prices on imported automobi
We are also confronted by a heavy demand f
which require the high speed European type

ANNOUNCEMENT has already gone to our dealers that within ninety days the price of the Jeffery Four will be increased. The war has done it. First it raised the cost of the imported materials which are freely used in the Jeffery Four, and now it brings us a flood of orders from markets, cut off from European cars, which still insist upon the European type of high speed motor and European attention to detail.

We are going to hold off the actual date of change in price as long as possible, but give this warning to prevent disappointments. The quality of the Jeffery Four will never be compromised; the car will continue as the perfect American type of car which, with small, high-speed motor, dominates the markets of the world.

The success of the Jeffery Four is known to the trade. That it is appreciated as well by people who own and drive this car is indicated by the following brief testimonials reprinted from letters received from owners everywhere.

The Jeffery Four, the car which introduced the European high-speed, high efficiency motor into America **$1450**

The Jeffery "BIG SIX"..... **2400**

The Jeffery Chesterfield Six..... **1650**

Jeffery Motor Trucks—three-quarter ton—one and one-half ton—Jeffery Quad.



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The Price of the Will Be Advanced

aterial, much of which is used in the Jeffery Four. e Jeffery Four from many foreign markets otor that Jeffery has made famous in America.

What They Say About the "Four:"

HE MADE COMPARISONS.

"After careful comparison of specifications, workmanship and appearance with ther cars of the price, I bought a Jefery Four. I have spent nothing for repairs. The car has proven equal to any emand that I have made on it and the nore I drive it the better I like it."
S. J. Robinson, Chicago.

EQUALS HIGHER PRICED CAR.

"My Jeffery Four is a fine car. As to ppearance, it matches any car here under $3000 and it is comfortable and owerful."
Walter B. Denny, Meadville, Pa.

A GOOD CAR.

"The Jeffery Four has the sweetest unning motor the writer ever rode behind. It is a wonderful hill climber and ome good car."
L. G. Martin, Pittsburgh, Pa.

A HIGH-GRADE CAR.

"Our Four made eighty miles in two ours and a half and it's a high grade ar from stem to stern."
C. O. Updike, Louisville, Ky.

MORE BUSINESS.

"Outlook for Jeffery business very right. Every Jeffery owner up here is a ooster and proud of his car. A Jeffery ar placed in any locality simply means nore business from that locality. It an't be beat."
P. J. Downes Co., Minneapolis, Minn.

MORE THAN GRATIFIED.

"The Four is far beyond my fondest opes. I have driven it a mile and a half er hour in high and I sure have them inking and thinking hard."
W. D. Faires, Macomb, Ill.

FIRST REAL CAR.

"We have driven many cars of other makes but the Jeffery Four is the first real car we ever had."
Drs. Moyer and Moyer,
Niagara Falls, N. Y.

GOOD LEATHER.

"I am more than pleased with the quality of leather in the Jeffery Four."
D. T. Bussey, Atlanta, Ga.

SMOOTH RUNNING.

"The Jeffery Four is the smoothest running four cylinder car that I have ever operated. I think it is a wonder."
Jud Joslyn, Rockford, Ill.

AN ENTHUSIASTIC OWNER.

"The Jeffery Four is a wonderful car."
Percy W. Dawley, Ogdensburg, N. Y.

HE LIKES IT.

"My Jeffery Four is a peach."
S. V. Wirick, Rochelle, Ill.

GREAT POWER.

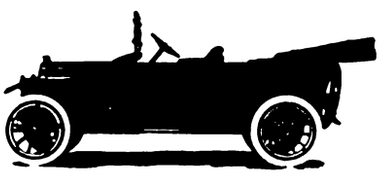
"I made forty miles per hour on third speed. The engine has lots of power and it is a wonder for speed. I am more than proud of this car—it has everything."
Dr. M. W. Yencer, Richmond, Ind.

ECONOMICAL.

"I get twenty miles to the gallon with the Four on a continuous hilly road."
Prince Wells, Louisville, Ky.

BEAUTY.

"My Jeffery Four is admired by all who see it and it is a credit to the designer. It is a beautiful car; right shape, right size and right finish."
H. Sanguinetti, Bakersfield, Cal.



The Jeffery Four, $1450

Specifications

MOTOR—High speed, high efficiency, bloc-type; 38 horsepower; 3¼ inch bore and 5¼ inch stroke.

STARTING-LIGHTING — Electric, flywheel type.

LUBRICATION—Combination force feed and splash.

IGNITION—Bosch Duplex.

CONTROL—Left drive and center control.

CLUTCH—Cone type, faced with best quality chrome leather.

BEARINGS—Imported annular ball bearings throughout.

OIL CAPACITY—Two gallons.

FRONT AXLE—One piece "I" beam section, forging of vanadium steel, double heat treated.

REAR AXLE—Full floating, ball bearing; shafts of chrome nickel steel, heat treated.

FRAME—Extra heavy pressed channel steel.

TREAD—56 inches. 60 inches optional.
WHEEL BASE—116 inches; car turns in 42 foot circle.

WHEELS AND TIRES—34 x 4; demountable rims.

SPRINGS—Front axle, drive shafts of vanadium steel.

TRANSMISSION — Selective, sliding gears, four speeds forward and reverse.

COLOR—Brewster green.

The Thomas B. Jeffery Company

Main Office and Works, Kenosha, Wisconsin

Jeffery

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Sound is caused by vibration. In an automobile vibrations set up objectionable noises. Some of these vibrations are so minute that they are imperceptible to the passengers, while others are in the nature of a blow.

Most automobile bearings transmit and intensify these noise-making vibrations—Hyatt Bearings on account of their spiral construction—absorb vibrations—cushion road shocks, and are known as Hyatt Quiet Bearings.

Two books, one about motor car bearings in general for prospective purchasers, the other for automobile owners, will be sent on request.

"Hyatt Quiet Bearings"

HYATT ROLLER BEARING CO.
DETROIT CHICAGO
NEWARK, N.J.

HY·FLEX·ROL
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What happens *after* you sell a car?

The new owner is entitled to satisfaction—the dealer to a profit.

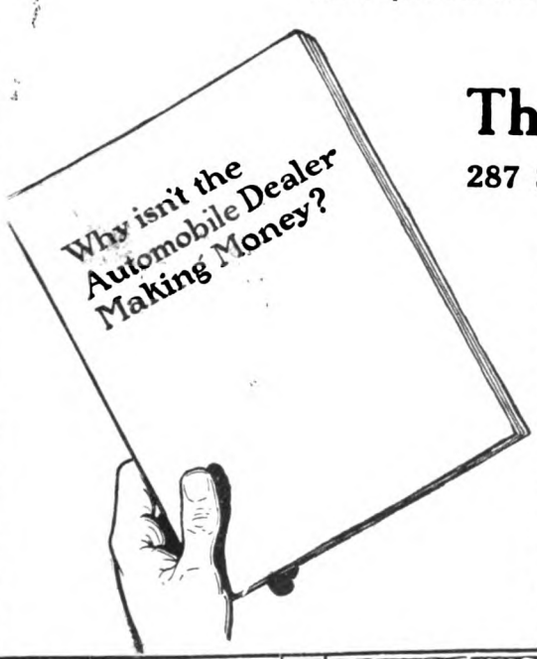
Naturally the owner looks to the dealer for SERVICE. The owner considers it his due. The dealer should be in a position to render it easily and at no great expense.

But,—why should the dealer burden himself with the added obligation of rendering a service that in addition to being very costly to himself, is not permanent for the user?

Why should the dealer be forced to make his salesroom a "service station" for some motor car accessory manufacturer?

Prest-O-Lite stands for user satisfaction and dealer profit. There are no "adjustments" or repairs on the lighting system to eat into the dealer's margin when he sells a Prest-O-Lite equipped car.

"Servicitis" has been thoroughly diagnosed in a book we've prepared for you. This book points the way out. Use the coupon.



The Prest-O-Lite Co., Inc.

287 Speedway **Indianapolis, Ind.**

COUPON

THE PREST-O-LITE CO., INC.,
287 Speedway, Indianapolis, Ind.

Please send "Why Isn't the Automobile Dealer Making Money" to—

.....

.....

Handling .....

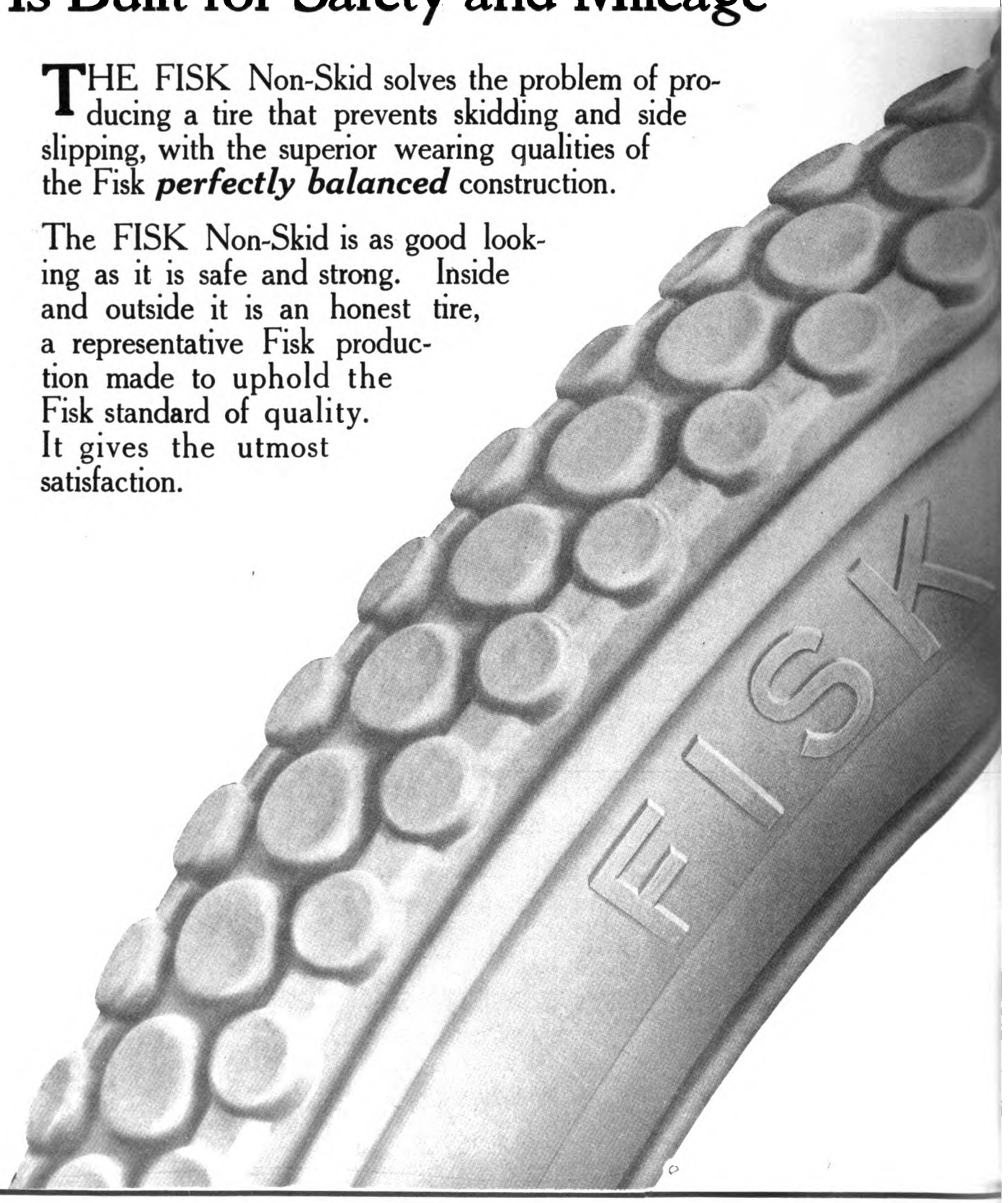
.....makes of cars.

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This New Fisk Non-Skid Tire Is Built for Safety and Mileage

THE FISK Non-Skid solves the problem of producing a tire that prevents skidding and side slipping, with the superior wearing qualities of the Fisk ***perfectly balanced*** construction.

The FISK Non-Skid is as good looking as it is safe and strong. Inside and outside it is an honest tire, a representative Fisk production made to uphold the Fisk standard of quality. It gives the utmost satisfaction.



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Enthusiasm And Quick Sales Follow The Fisk Non-Skid Wherever Shown

TIRE USERS who adopted the Fisk Non-Skid when it was first introduced became enthusiastic over it. Car owners everywhere wanted this famous new tire that **really prevented skidding and gave such remarkable mileage. As a result, the demand soon outgrew the supply.**

We stopped advertising and began enlarging our plant. Now, at the end of two years, with trebled facilities, we are prepared to furnish real non-skid equipment to tire users everywhere.

DEALERS: Your customers want a non-skid tread that is positive in action and an effective guard against loss of traction and side slipping. Sell them the Fisk Non-Skid Tire now for *all the year 'round.* It's the handsomest tire that ever went on a car wheel.

REMEMBER, FISK DEALERS are benefiting from the great demand created by our National advertising in Saturday Evening Post, Collier's, Life and Literary Digest. The public has been quick to respond with orders. If not a Fisk Dealer at present, and you desire to become one, write Dept. 23 for our Dealer Plans.



THE FISK RUBBER COMPANY

Factory and Home Office Chicopee Falls, Mass.

Fisk Branches in 43 Principal Cities

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Studebaker

Optimism and Opportunity

As we said in our newspaper advertisement of August 16th, "it is very good these days to be an American."

During this month our country has encountered a trying experience in which our finances, our foreign trade and even our domestic business have been disturbed by the sudden and tremendous wars in our ancestral countries.

Yet, we are coming out of it well.

The President, with his cabinet and the Congress, and the co-operation of bankers and business men called to Washington for the purpose, have promptly and nobly met the emergency by sensible rulings and wise laws, which will largely free our industries and commerce from restraint.

They have arranged for the issuance of emergency currency, through amendment of the Aldrich-Vreeland Law, under which national banks can obtain all the currency needed for legitimate business.

They have organized the Federal Reserve Board which will insure the opening of the twelve new Federal Reserve Banks inside of sixty days, thus giving ample banking facilities for business to every section of our country.

They have amended the ship registry laws so that American capital will buy foreign ships, which together with the large number of ships already owned by Americans, will fly the flag of the United States and furnish ample carrying capacity for our foreign trade.

They have opened the Panama Canal, and thus provided shorter routes for our commerce with South America, Australia and the Far East.

They have under consideration a plan of financing the surplus cotton crop so that our southern planters will be enabled to hold their cotton until normal markets are restored.

The Studebaker Corporation with its 62 years of business experience, its thousands of employes and its millions of capital invested — appreciates the patriotic work that has been done and the opportunities thereby afforded.

Speaking from our experience and immediate forecast of possibilities, we feel cheerful and optimistic over the outlook for profitable business and steady employment of labor, with increasing developments of foreign trade in neutral countries.

America is today the clearing house of the world.

The great nations of the earth are depending upon the integrity of her friendship—the safety and saneness of her diplomacy—the extensiveness of her trade and the soundness of her finance.

It is a time for Americans to show their optimism, their patriotism and their aggressive earnestness.

The foundations of our National prosperity have been laid too deep and too strong to be seriously disturbed, even by so great a catastrophe as the war of all Europe.

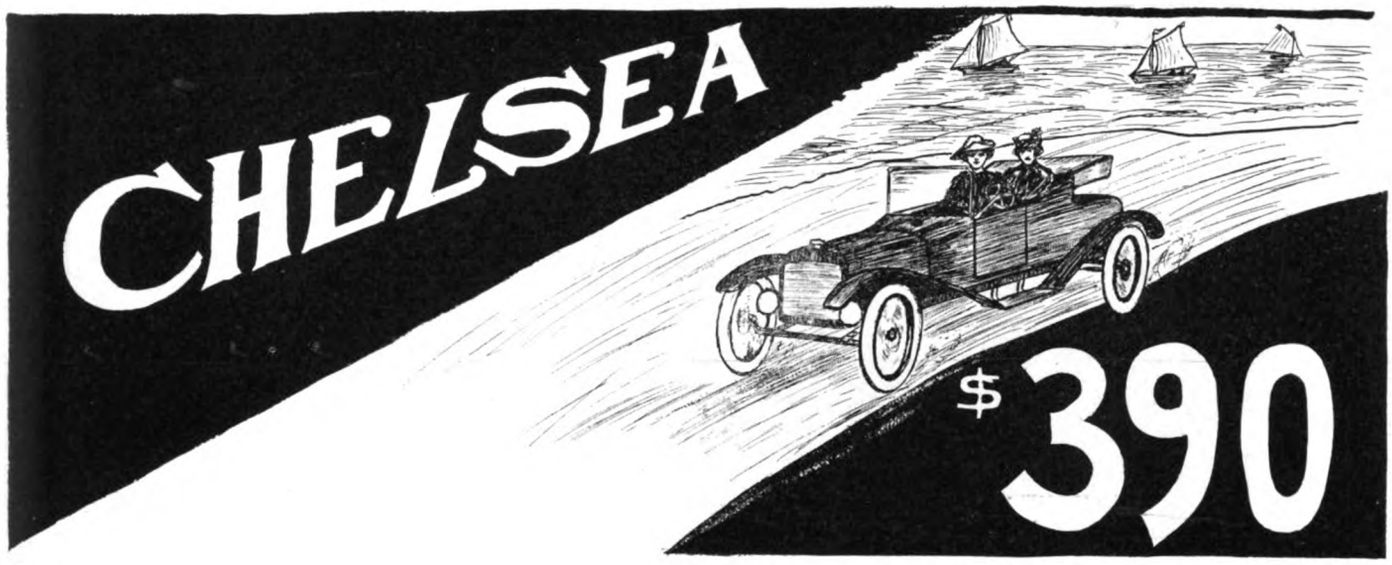
We regret deeply and sincerely that the war must be—yet, we are in no wise to blame and are happily far removed from the theater of its activities.

Friendship we feel for all—and toward all we must remain in both thought and action entirely neutral.

Our duty to ourselves and our moral obligation to the rest of the world compel us Americans to be up and doing; to maintain a cheerful and hopeful spirit, to operate our industries and business enterprises, to pay our bills as usual, and to conduct our affairs generally on conservative, but enthusiastic lines.

The Studebaker Corporation
South Bend, Ind., Detroit, Michigan
Manufacturers of Studebaker Motor Cars and Vehicles

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READ! READ!
DETAIL SPECIFICATIONS

MOTOR—4 cylinder, water-cooled by Thermo-Syphon System. Bore 2¾-inch, stroke 4-inch, developing full 18 H. P. Large valves. Positive hill proof oiling system. Valves enclosed.

CLUTCH—High grade cone clutch, leather faced, having pickup springs under the leather. Ball-Bearing Thrust.

TRANSMISSION—Selective sliding gear type, providing 3 speeds forward and reverse. Gears of large proportion, and made of highest quality steel, double heat treated and oil hardened.

IGNITION—High Tension Magneto. No batteries. No coils

CARBURETOR—Float Feed.—Very simple adjustment.

FRONT AXLE—Tubular.—Extra heavy. Ball-Bearings in wheels.

REAR AXLE—Special-Floating-Roller Bearing.—Extra heavy throughout.

DRIVE—Enclosed shaft drive, running on Roller Bearing.

UNIVERSAL JOINT—The famous Spicer Universal Joint.

SPRINGS—CHELSEA Special Cantilever type. Extra long. Wonderful riding quality. Made of highest grade Manganese Steel.

FRAME—High Grade Channel Steel, 3-inch by 1¼-inch. Pressed to form.

RADIATOR—Extra large capacity. Horizontal Finn type.

WHEELS—High Grade Wire Wheels. Heavy Spokes. Triple-baked black enamel.

WHEEL BASE—102 inches.

TREAD—Standard 56-inch Tread.

TIRES—Standard 28-inch by 3-inch. Corrugated Tread.

BODY—Latest type perfect Torpedo Stream-line body. Large and roomy. 21-inch wide doors. 40-inch wide seating. 54 inches of Leg room. Tool compartment under seat. Large compartment for baggage, suit case, etc., under rear deck. Deep and comfortable cushions and upholstery.

COLOR—Hood, Fenders, Running Gear in rich Black. Body in "CHELSEA Special" dark blue. Hub caps CHELSEA RED.

EQUIPMENT—2 Electric Head Lights, Electric Tail Light, Horn, Tools, Pump.

PRICES

Chelsea Speedster	$390
Chelsea 600-lb. Panel Body Delivery	425
Chelsea Touring Car, fully equipped	485

All Prices F. O. B. Newark, N. J.

1915 - ANNOUNCEMENT - 1915

JUDGING by the unprecedented interest created, when we announced the first CHELSEA Speedster for the 1914 season, and considering the boundless enthusiasm, shown alike by the veteran automobile dealer of the large cities and the garageman or implement dealer of the farming districts—we began preparations for the 1915 season, firmly determined to continue our original and from the start well defined policy and make each CHELSEA car represent to its purchaser the highest attainable DOLLAR FOR DOLLAR **VALUE.**

VALUE

We believe that to the dealer and the consumer alike "Value" is the first and chief consideration, and that is what we offer in each CHELSEA car: VALUE—unconditionally—absolute and proven Value.

When the consumer purchases a CHELSEA car he positively gets a Dollar's value for each Dollar paid.

THE DEALER that sells the CHELSEA car can rest content in this knowledge, and besides will find at the end of the season, that each CHELSEA customer is a CHELSEA BOOSTER. There are NO "come-backs"—NO "knockers"—NO "profits paid out for free repairs" items on his books. A CHELSEA agency knocks the "Loss" out of the "Profit and Loss" account of the wide-awake dealer.

DEALERS—ACT NOW!

REMEMBER, we offer three models, of the kind and at the price that will make them SELL. They are WHAT the public wants, at the price they WILL PAY.

We don't want to sell you any of our capital stock—we don't expect you to put up large sums of deposit money—we will not ask you to contract for more cars than we expect to deliver to you.

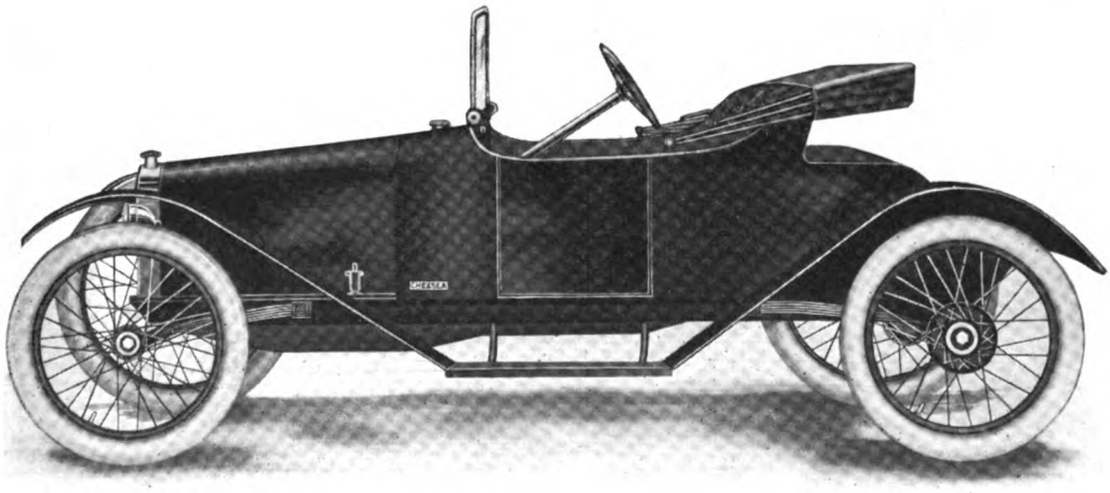
IF YOU WANT a good clean selling proposition—a car that will MAKE GOOD—a manufacturer that will help you by treating you right—a contract that will mean PROFITS, CLEAN and HONEST PROFITS to you, do not hesitate one moment. Waste no time.

Write or Wire Us Today

WE shall immediately mail you our literature and write you regarding our sales plan. IT'S ENTIRELY UP TO YOU.

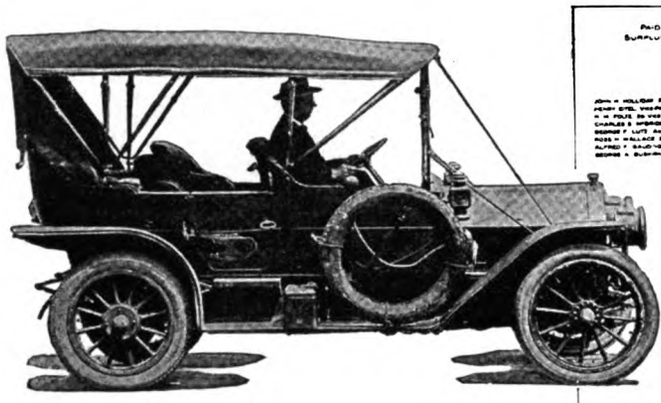
Chelsea Manufacturing Company

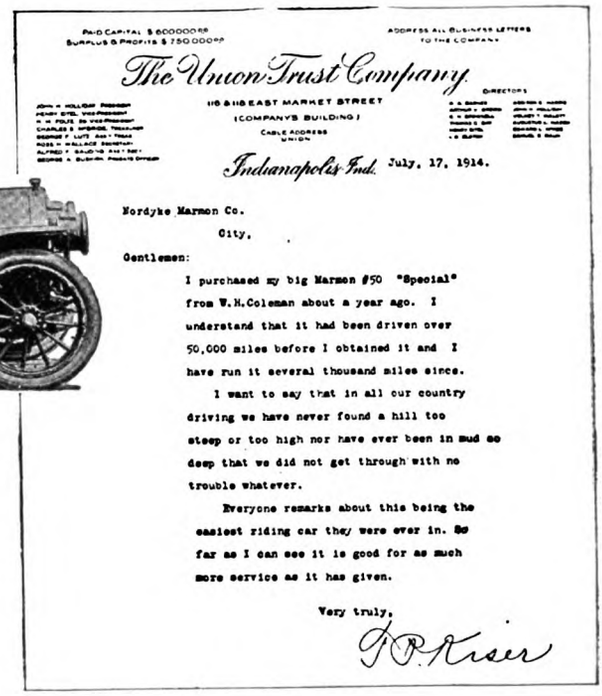
5-7-9 Webster Street, NEWARK, N. J.



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"The Easiest Riding Car In The World"





The Union Trust Company

110 & 112 EAST MARKET STREET

(COMPANY'S BUILDING)

Indianapolis Ind. July. 17. 1914.

Nordyke Marmon Co.

City.

Gentlemen:

I purchased my big Marmon #50 "Special" from W.H.Coleman about a year ago. I understand that it had been driven over 50,000 miles before I obtained it and I have run it several thousand miles since.

I want to say that in all our country driving we have never found a hill too steep or too high nor have ever been in mud so deep that we did not get through with no trouble whatever.

Everyone remarks about this being the easiest riding car they were ever in. So far as I can see it is good for as much more service as it has given.

Very truly,

J.D.Kiser

What the Well Satisfied Customer Means to You

Satisfied, enthusiastic owners make the greatest selling asset any dealer can possess.

There is no form of advertising that will sell high class cars so quickly as the praises of the big men who already own such cars—the very men for whom this car is built.

Your First Sale Opens the Way

Right in your territory is at least one big man whose position entitles him *to demand* the best.

He is your opportunity.

He is a logical Marmon owner.

And once let him own a Marmon and he becomes a big asset to your business.

Your Customer's Influence Becomes Yours

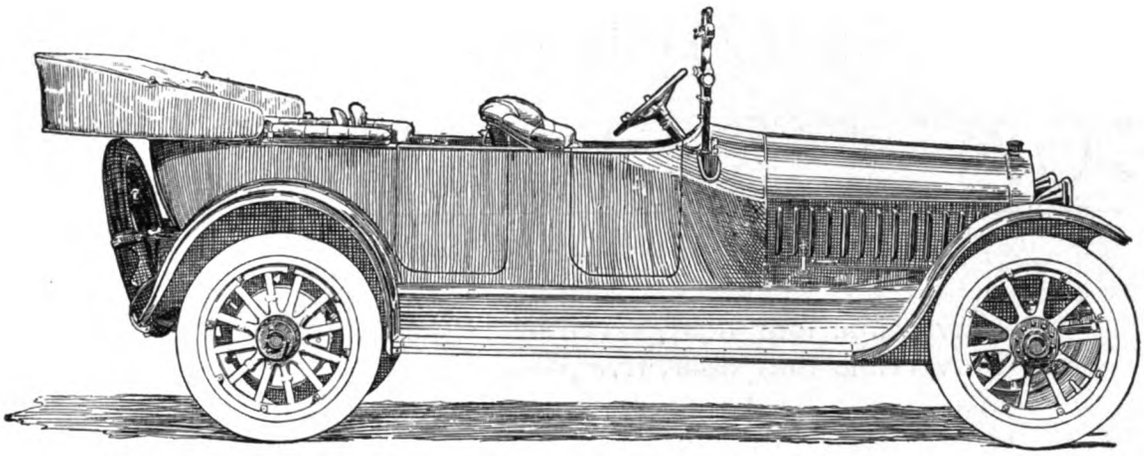
There are a good many people ready to listen to what the big man says. And his praise of his Marmon forms a better sales tonic than anything you can say or do.

Nordyke & Marmon Company
Indianapolis, (Established 1851) Indiana

"Over Sixty Years of Successful Manufacturing"

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"The Easiest Riding Car In The World"



The New Marmon "41" Medium Six, $3250

There are many big, live, vital sales features that should lead the capable, intelligent car salesman to investigate the Marmon proposition.

Get the new Marmon "41" details—you'll find here the **only** "center fire" "L" head engine in any American car, the **only** continuous circulating oiling system which automatically feeds oil under pressure to the cam shaft and valve tappets as well as to every bearing surface, the **only** clutch which unites the simplicity of the cone with the smoothness of action of the multiple disc. The beautiful. tapering bodies leave nothing to be desired in the way of appearance. It is the **only** car with the new Bosch starting and lighting system designed, guaranteed down to the smallest wire by these world-famous makers, solely for the new Marmon "41." There are Silvertown Cord tires, one-man top and many other details of Marmon standard equipment that prove value to the salesman.

These Real Sales Points Should Appeal to You

This car **actually** offers just what the experienced car buyer wants.

It gives you an immediate opportunity to broaden and stabilize your business.

Take the time right now and investigate the new Marmon merchandising plan and what it means to you.

It was made to help your business and bring you satisfied customers and permanent profits.

Marmon "41" 132-inch Wheelbase, $3250
Five Passenger Touring

Marmon "48" 145-inch Wheelbase, 5000
Seven Passenger Touring

Nordyke & Marmon Company

Indianapolis, (Established 1851) Indiana

"Over Sixty Years of Successful Manufacturing"

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SPRINGFIELD CONVERTIBLE BODY

1915 Series

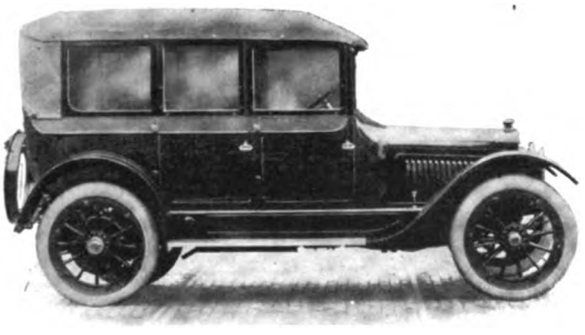
Convertible four door, seven passenger body - $1,300
Convertible four door, five passenger body - - 1,200
Convertible Sedan, four—five passenger body - - 800
Convertible Runabout, two passenger body - - 800

The incomparable utility and wide range of service which is practicable only with a car equipped with a SPRINGFIELD CONVERTIBLE BODY, takes on a new significance with the addition to our regular four door convertible type body of the new SPRINGFIELD CONVERTIBLE SEDAN.

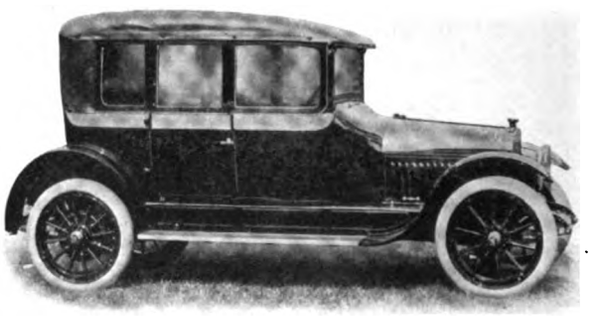
THE SPRINGFIELD CONVERTIBLE SEDAN BODY is designed for mounting on chassis of the Cadillac and Hudson type, and its price is consistent with the investment cars of that class involve. The regular four door SPRINGFIELD CONVERTIBLE BODY is, as in the past, better adapted for larger cars, such as the Packard, Pierce-Arrow, Simplex, Locomobile, Fiat, etc.

The refinements and improvements incorporated in the new SPRINGFIELD CONVERTIBLE BODIES, when considered in connection with the practical and economical advantages these bodies offer, make them more worthy of your consideration this year than ever before.

Photographs, descriptions and discounts will be mailed to reputable established dealers upon request.



Springfield Convertible 5 or 7 Passenger Body—Four Door Type



Springfield Convertible 4 or 5 Passenger Body—Sedan Type

The Springfield Metal Body Company

New York Branch
1737 Broadway

Springfield, Massachusetts

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Seven Solid Reasons for Using Gurney Bearings

What are the facts behind the Gurney success?

Distinctive features of Gurney Ball Bearings.

1 Unique Design. Full Type, No Filling Slots, Full Depth of Raceways.

2. Thrust Capacity that puts them in a class by themselves, in Radio-Thrust Bearings up to 100 per cent.

3. Single piece, Jointless Separator, permitting the maximum number of the minimum size of balls.

4. Raceways ground to the contour proved and admitted to be most efficient, and always so ground.

5. Rings ground to a degree of concentricity unapproached by any other make.

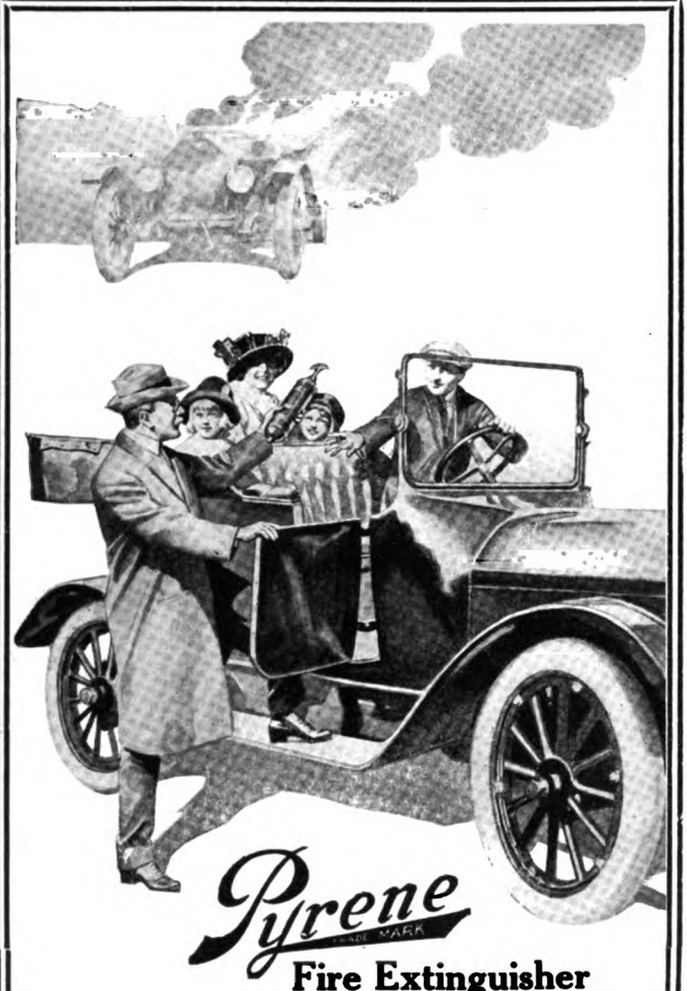
6. Made to a degree of accuracy unequalled by any others.

7. Uniformity. Every ring that goes through our factory is not only produced by processes that give it these distinctive characteristics, but is subjected to drastic tests, to the most minute and rigid inspection, which none but the perfect can pass. If it were not for our wonderful processes of production we could not afford to subject our products to the hardships of testing and inspecting they have to undergo. The latter is made commercially possible by the former. For these reasons our bearings have, as perhaps the most important of all, this quality of uniformity.

Gurney Ball Bearing Company

Jamestown, N. Y.

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Pyrene
TRADE MARK
Fire Extinguisher

15% Reduction
In Your
Insurance Premium
and PROTECTION

From the Dangers and Annoyances of Fires on the Road if Your Car is Pyrene-Equipped

¶ Your new car will be Pyrene-equipped at the factory if you demand it.

All leading Insurance Companies allow 15% reduction on the Fire Insurance Premiums of Pyrene-equipped motor cars, which reduction was originated by The Aetna Accident and Liability Co. and The Automobile Insurance Co. of Hartford, Conn.

Collisions happen and the overturning of an auto is not infrequent and fires follow, threatening the lives of passengers unable to extricate themselves. The Pyrene Fire extinguisher accessibly located may be the means of saving the lives of your companions.

Ask that your new car be Pyrene-equipped at the factory.

AT ALL FIRST CLASS SUPPLY DEALERS

Brass and Nickel-plated Pyrene Fire Extinguishers are included in the lists of Approved Fire Appliances issued by the National Board of Fire Underwriters examined and labeled under the direction of the Underwriters Laboratories.

Pyrene Manufacturing Co., 1358 Broadway, New York
OFFICES IN ALL PRINCIPAL CITIES

D & C LAKE LINES

"Two GIANTS of the Great Lakes"
Str. City of Detroit III.
Str. City of Cleveland III.



Operating Between Detroit and Buffalo

The Delights of a Lake Trip

REST after work is necessary to human endurance, and holidays are a wise economy. The Great Lakes of America offer more vacation opportunities than any other source in the country. The steamers of the Detroit and Cleveland Navigation Company, operating to all important ports, are unrivalled in point of elegance, comfort and quality of service—the perfect freedom offered by the saloon and promenade decks, the commodious state rooms, luxurious furnishings and excellence of cuisine make life aboard these floating palaces a solace to the weary mind and body.

Where You Can Go

Daily service is operated between Detroit and Buffalo, Detroit and Cleveland; four trips weekly between Toledo, Detroit and Mackinac Island, the historic summer resort of the North Country; and from June 25 to Sept. 10 a special steamer, two trips weekly, will be in commission between Cleveland and Mackinac Island, stopping only at Detroit every trip. During July and August special daylight trips between Detroit and Cleveland. From June 10 to Sept. 10—daily service between Toledo and Put-In-Bay.

Railroad Tickets Available

Tickets reading via any rail line between Detroit and Buffalo, Detroit and Cleveland will be honored for transportation on D. & C. Line Steamers in either direction. Send 2 cent stamp for illustrated pamphlet and Great Lakes Map. Address L. G. Lewis, G. P. A., Detroit, Mich.

Detroit & Cleveland Navigation Co.
Philip H. McMillan, Pres. A. A. Schantz, Vice-Pres. and Gen. Mgr.
General Offices, Detroit, Mich.
Steamers arrive and depart from Third Avenue Wharf, Detroit.

THE Detroit ELECTRIC
SOCIETY'S TOWN CAR

Every Third Electric Built and Sold is a Detroit Electric

Prices

With Bevel Gear Axle		*With Worm Gear Axle*	
4-passenger Brougham Rear seat drive	$2550	Gentleman's Roadster	$2500
5-passenger Brougham Front seat drive	2800	4-passenger Brougham Rear seat drive	2850
		5-passenger Brougham Detroit Duplex Drive	3000

Anderson Electric Car Company, Detroit, Mich.
Builders of the Detroit Electric
World's Largest Manufacturers of Electric Pleasure Vehicles

HOUK
Detachable
WIRE WHEELS
"The wheel that makes any car modern"
George W. Houk Company, 1703 Elmwood Avenue, Buffalo, N. Y.
Also Broadway and 58th Street, New York City

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"New Ignition for Old"

is a feature of SPLITDORF BRANCH HOUSES. We have an exchange proposition of the greatest interest to every owner of a gasoline motor who would save time and money. You can exchange ANY MAKE of magneto or, in fact, any ignition system throughout with us—low tension, dual, self-contained high tension systems, and coils and transformers—and save real money with our up-to-the-minute equipment.

Write or Call for "Exchange Details"

SPLITDORF ELECTRICAL COMPANY

ATLANTA	10-12 E. Harris St.	LOS ANGELES	1215 S. Hope St.
BOSTON, St Germain & Mass. Ave.		MINNEAPOLIS	34 S. 8th St.
CHICAGO	64-72 E. 14th St.	NEWARK	290 Halsey St.
CINCINNATI	811 Race St.	NEW YORK	18-20 W. 63d St.
DALLAS	402 S. Ervay St.	PHILADELPHIA,	210-212 N. 13th St.
DAYTON	427 E. 3d St.	SAN FRANCISCO	1028 Geary St.
DETROIT	972 Woodward Ave.	SEATTLE	1628 Broadway
KANSAS CITY	1827 Grand Ave.	TORONTO	469 Yonge St.
LONDON		BUENOS AIRES	



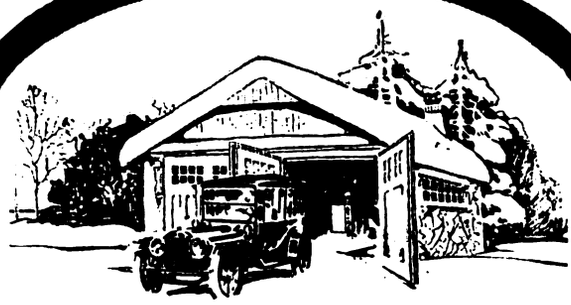
"WHITNEY" KEYS FOR FORD CARS

In order to supply the demand for "Whitney" Keys for Ford cars we are now prepared to furnish a box containing 12 keys especially assorted for these cars.

Each box contains a circular describing each key, giving size and where used. Every garage and repairman should have a box of these keys on hand. They cost little and are very convenient.

THE WHITNEY MFG. CO.

HARTFORD, CONN.



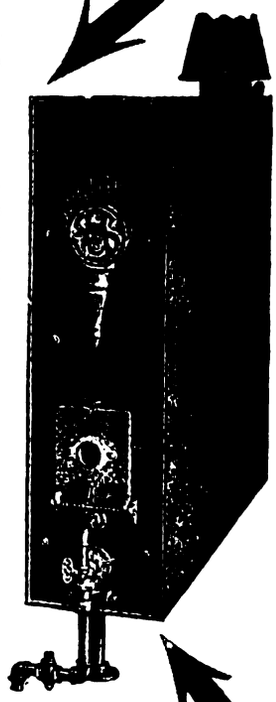
What Do You Tell Your Customers When They Ask You How To Heat a Garage?

When a customer asks you how to heat a garage what do you tell him?

This is the season of the year when you will hear this question scores of times.

Scientific Safety Garage Heater

A new accessory that every garage dealer can sell. Thousands of enthusiastic motorists use and endorse it. Our big advertising campaign is creating inquiries from all parts of the United States and Canada. We turn these inquiries over to you and supply you with sales getting literature to circularize your local prospects. **We want a live dealer in every locality at once.**



There is big money in each sale you make. One dealer sold over ninety heaters last season without any great effort upon his part. **His actual profits were close to five hundred dollars.**

The Scientific Safety Garage Heater is the only device of its kind, built especially for a garage. It is absolutely guaranteed or money back, and is approved by insurance officials and fire marshals. Made in three sizes according to heating radiation. Consumes either artificial or natural gas and can be installed at a slight cost by any local plumber or steam fitter. Also used widely in public garages.

Write or wire for our special dealer's proposition and literature

The Scientific Heater Company

FACTORY AND EXECUTIVE OFFICES:

2100 Power Avenue Cleveland, Ohio

Distributors in Principal Cities

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Be Sure the Lamps You Buy Bear the Name EDISON

Edison MAZDA Lamps are generally used on automobiles, motor trucks, trains, trolley cars, factories, offices, etc.

Considerable variation in these fields—nevertheless Edison MAZDAS are used because they give the most efficient and satisfactory service everywhere.

EDISON MAZDA *Automobile Lamps*

are made in the same factories with the same knowledge, experience and detailed application, that is given to the larger and more powerful units made by the largest manufacturer of incandescent lamps. Edison MAZDA Automobile Lamps are constructed with thick, strong filaments designed especially for the service.

Because of this acknowledged experience in automobile lamp manufacture, nearly every engineer of cars and lighting systems has adopted Edison MAZDAS as standard, and practically every car owner today when replacing bulbs is insistent on Edison MAZDAS.

Be sure the lamps you buy bear the name Edison.

(4585)

EDISON LAMP WORKS
OF GENERAL ELECTRIC COMPANY
General Sales Office Harrison, New Jersey.

R K

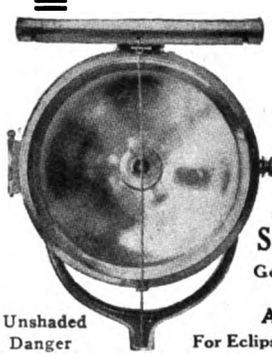
"Safety First" Headlight Shades

for instantly toning down the blinding glare of your headlights into a powerful, but non-blinding illumination, are indispensable in night driving.

A simple, well constructed appliance consisting of a roll-curtain of translucent fabric, is contained in a neat cylindrical case which is fastened to the top of the headlights. Pressing a pedal draws down both shades and locks them in place; a simple releasing movement allows them to fly back again out of the way.

Motorists find "SAFETY FIRST" Headlight Shades an essential permanent equipment, easily attached to any make car equipped with gas or electricity. Cannot rattle, are rain and mud proof. $10.00 PER PAIR installed.

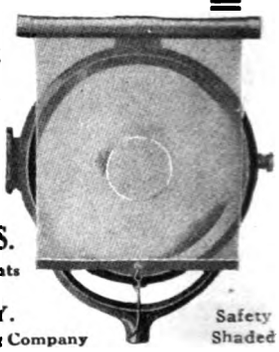
Mr. Dealer, you can sell 75% of car owners the "SAFETY FIRST" Shades if you will but demonstrate a few times.



Unshaded Danger

Good inducements to dealers. Write for circulars and terms for demonstrating outfit.

SMITH BROS.
General Sales Agents
Box M. W.
AUBURN, N. Y.
For Eclipse Manufacturing Company



Safety Shaded

EISEMANN



The performance of Eisemann Ignition Systems during the Indiana-Pacific Tour justifies every claim we have ever made for Eisemann efficiency and dependability.

The Eisemann Magneto Company
Sales and General Offices
32 33rd St., Brooklyn, N. Y.

New York 123 W. 52d St. | Indianapolis, Ind. 514 North Capitol Ave | Detroit, Mich. 882 Woodward Ave.

$2400
Completely Equipped

More Power
More Flexibility
More Economy
More Silence

MOLINE KNIGHT



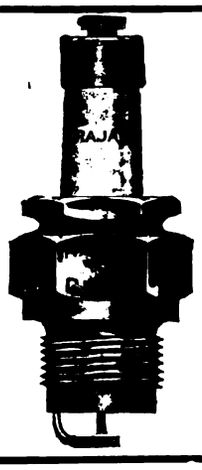
Four-cylinder, five-passenger, 50 horsepower, 128-in. wheelbase.

Bosch ignition, Wagner electric starting and lighting, $2400.

The car of the future will not have poppet valves

Moline Automobile Co., East Moline, Ill.

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RAJAH
GIANT PLUG

For pleasure car, motor-boat or truck.

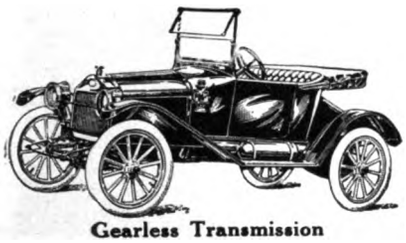
Porcelain and metal parts large and strong.

Extremely simple construction for cleaning — only four parts — shell, porcelain, bushing and gasket.

With proper care, GIANT Plugs can be used for years.

Rajah Auto Supply Co., Bloomfield, N. J.

METZ "Twenty-Two" Roadster



WINNER OF THE GLIDDEN TOUR

$495

Gearless Transmission **Equipped Complete**

Fore door body, extra thick tufted upholstery, plate glass rain-vision wind shield, left-hand drive with center control, 4-cylinder 22½ H.P. water-cooled motor, Bosch magneto. Prest-O-Lite tank, extension top, full elliptic springs, artillery wheels, best quality Goodrich clincher tires, 5 lamps, horn, pump, jack, tools. Speed, 50 miles per hour. Beats 'em all at climbing hills. Secure EXCLUSIVE SALE in your territory. Write for terms and catalog "B."

METZ COMPANY - WALTHAM, MASS., U. S. A.



There is going to be a mighty active demand for Warm Hand Steering Wheels this fall—and at the last minute we are going to be rushed to the limit to make any kind of deliveries, just as we were last year.

Don't wait till the last minute before stocking up with this accessory and then be disappointed at not being able to fill orders—we are warning you in ample time.

Even if you don't want immediate shipment at least let us know about what your requirements will be for this fall so that we can arrange to take care of your orders in ample time.

Remember that the Warm Hand Steering Wheel is just as necessary to comfortable driving in the fall months as it is in winter and that there is a lot of business to be done as early as September and October. Write us today for full information as to territory, discounts, etc.

Retail Price, $10.00

Patented April 23, 1907; Feb. 11, 1908; April 2, 1912. Other patents pending

The Warm Hand Steering Wheel Corp., Inc.
POUGHKEEPSIE, NEW YORK



Price and Quality Cannot be separated; the one maintains the other

That is why Republics cost more than average tires—and why high-grade motorists gladly pay more to get them.

That is why Republic customers *stick* —and why men who buy "cheap" tires are continually experimenting.

SELL—

REPUBLIC MILEAGE TIRES

PLAIN AND STAGGARD TREAD

Republic Staggard Tread, Pat. Sept. 15-22, 1908

—it's the best kind of business insurance you can get. Write for the Republic proposition. Let us tell you more about Republic QUALITY.

THE REPUBLIC RUBBER CO.
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Branches and Agencies in all Principal Cities

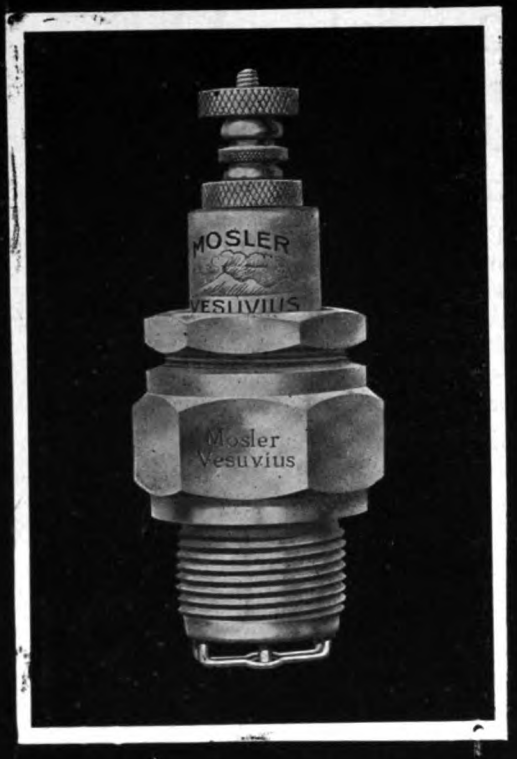
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Here is the baby of the Republic family. He's a quality tire, too, made in three sizes, designed especially for small cars. His specifications.

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Made to fit any engine, any thread.

Stone Insulation is practically unbreakable.

Unique method of assembly renders Vesuvius Plugs absolutely gas tight and insures perfect adjustment of sparking points.

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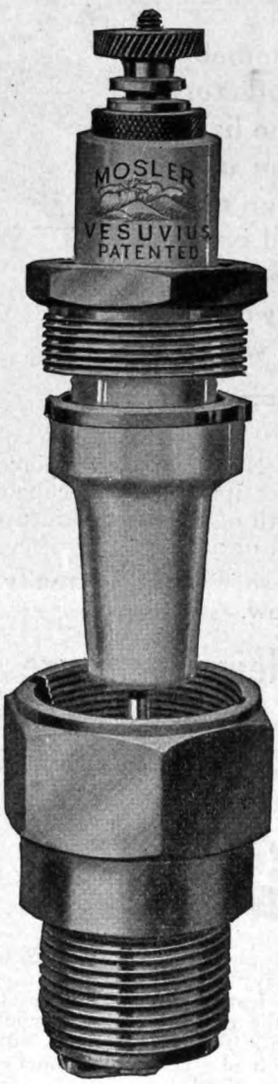
Sure because of methods and workmanship employed in manufacture.

EXCLUSIVE FEATURE

Note ears on collar.

The only plug that has means for assembly without rotating the insulator.

Washer and ears take up all friction of the nut and give the direct straight pressure which makes the plug absolutely gas tight.



Collar takes up friction of nut.

Collar cannot turn when nut is tightened because ears on collar fit into slots in shell.

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2,000 men, skilled in manufacturing ball bearings, are at your command.
Works of the New Departure Manufacturing Company.

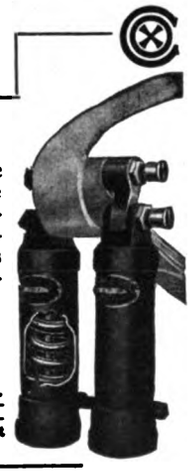
The New Departure plant is producing between ten and twelve thousand bearings per day and this is not its maximum capacity. We can guarantee your specified deliveries not only now, but for any length of time in the future. We can also guarantee the quality of New Departure bearings to be the equal of any.

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Coxajusto
ADJUSTABLE TO ANY LOAD

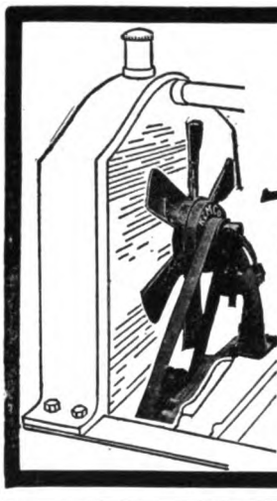


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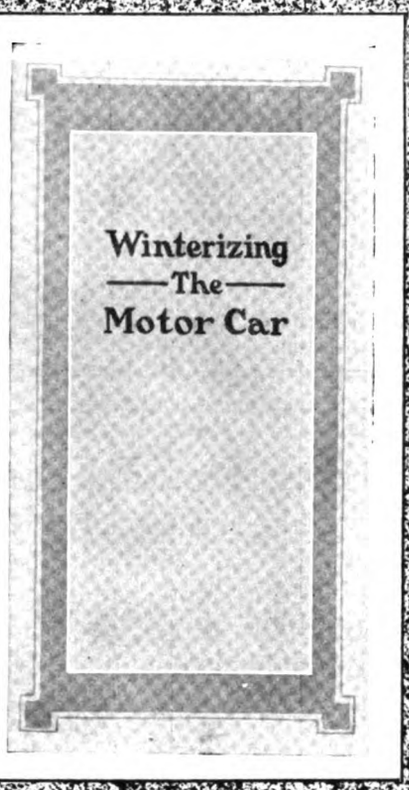
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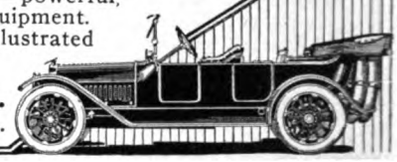
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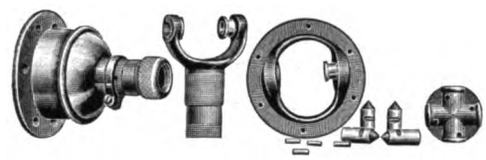
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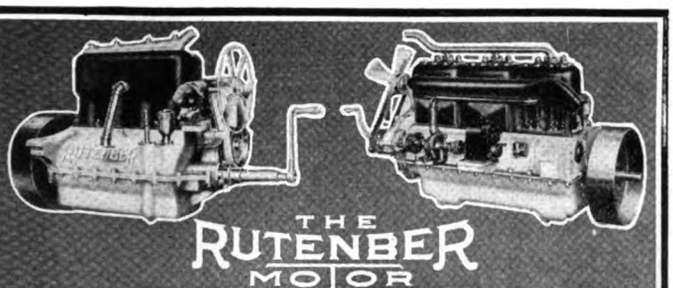
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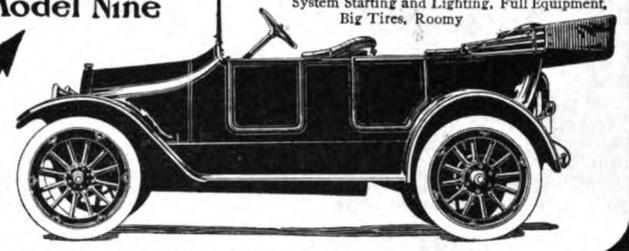
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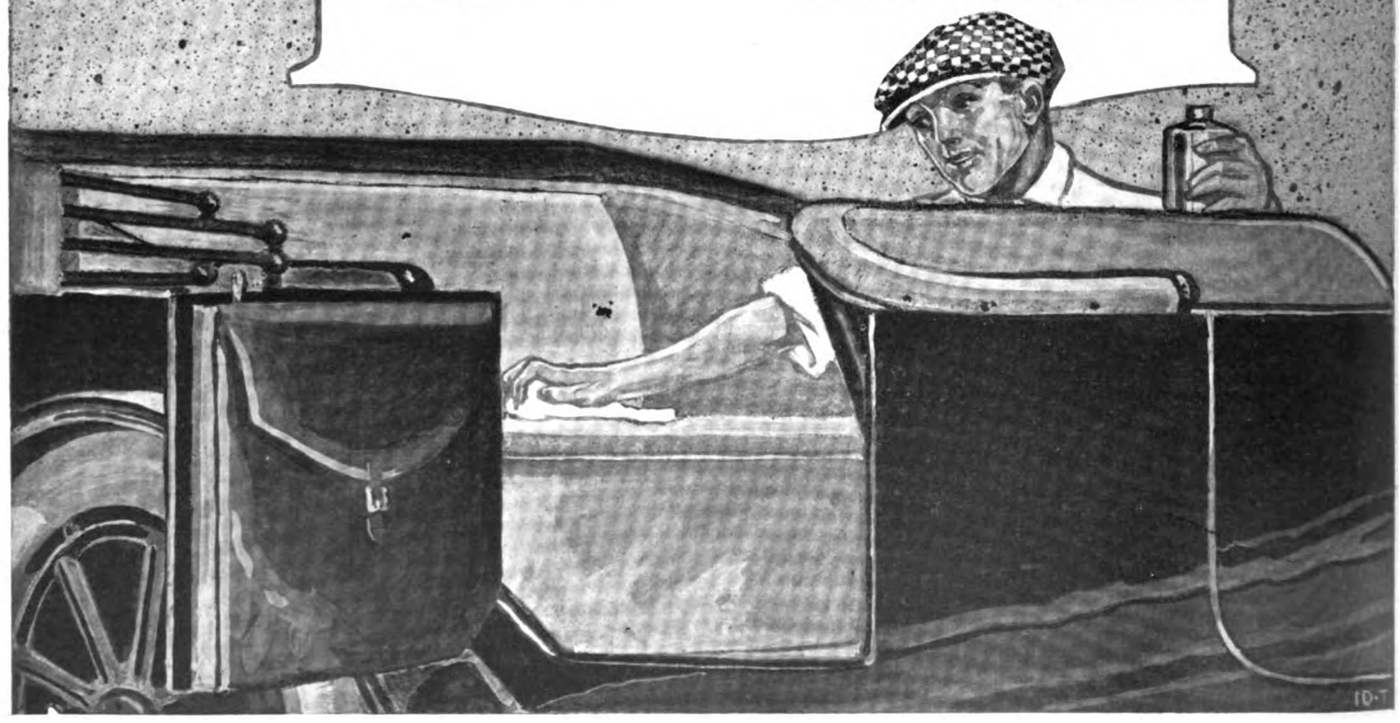
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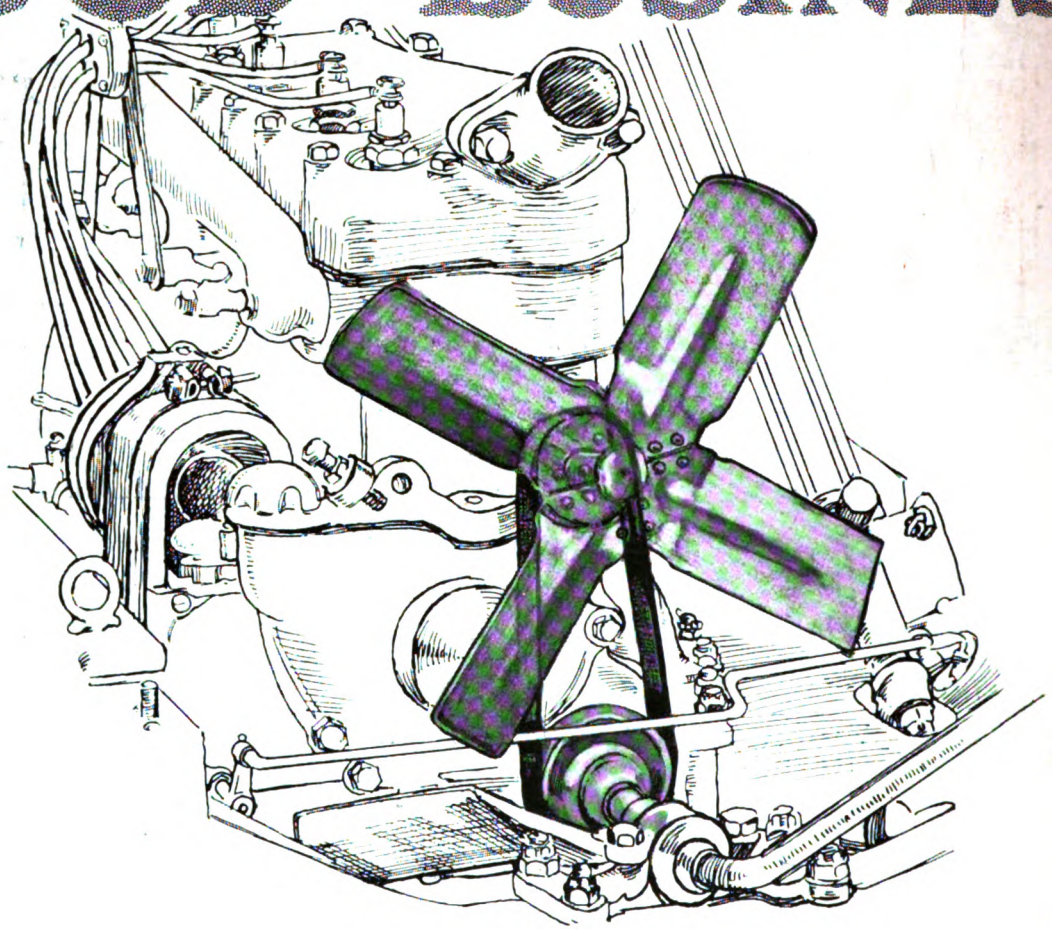
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ACCESSORY DEPARTMENT

L. H. GILMER CO., 52 N. 7th Street, Philadelphia, P

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MOTOR WORLD

A Trade Paper Giving the World's Motor News

Volume XL
No. 11

New York, September 9, 1914

Ten cents a copy
Two dollars a year

Pierce-Arrow

An investment that pays continuous dividends

APPLY to the purchase of a motor car the same judgment that directs your purchase of securities. In each case you have a right to an unfailing supply of dividends and a ready market whenever you want to sell.

The dividend that comes from a motor car is the pleasure that it gives you. It is not enough that this should be as great as possible; it must also be as frequent as possible. Pierce-Arrow owners never get over the novelty of possessing a Pierce-Arrow.

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BUFFALO NEW YORK

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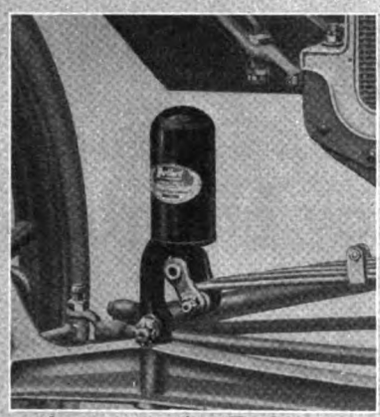


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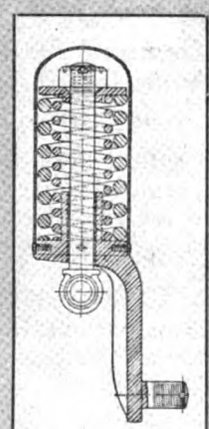
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Make Your Ford Ride Easy by equipping it with the special Ford model HARTFORD CUSHION SPRINGS. Comfort counts. Hartford Cushion Springs applied to the springs of your Ford will enable you to enjoy every moment that you ride NO MATTER WHERE YOU RIDE.

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Full size, capable, tempered vanadium-steel springs. Double-acting. Extra large bearing surfaces.

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"Money back if not satisfactory." Under this broad policy all Hartford products are sold. Any article of our manufacture not proving satisfactory after 30 days' trial from date of purchase, can be returned and the purchase price will be refunded.

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Manufacturers of Hartford Electric Starting and Lighting System

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The Value to a Dealer of Any Automobile Agency Hinges on—

Demand for the Car
Volume of Factory Output
Selling and Advertising Assistance Rendered by the Manufacturer

LET'S try to analyze these things man to man. We'll assume for the sake of argument that the car we are considering fills the niche heretofore left void. That in consequence there is a demand for it.

We agree on that point. Alright! But where do you—the dealer—come in, if the facilities of the manufacturer are such as to limit his output to a small number of cars.

Let us look at it in this light. Suppose there are in the field two makers of the class of cars we have in view. The demand for the car we admit. Suppose we allow that both makers can produce cars in quantities. How shall we decide between them? The merits of the individual cars being equal, wouldn't the deciding factor be the sales and advertising assistance offered by the two makers? If one offered little and the other much help we know where the choice would fall. So far so good.

The point we wish to drive home is this: That the Maxwell agency proposition is the big opportunity for the dealer, no matter what his location.

We are not promising deliveries on our 1915 model for some indefinite date. We are shipping this model now. Delivered better than 2100 cars in August and our daily September deliveries so far have averaged better than 150 a day. 300 a day will be reached in short order.

The photograph shown was taken in our Detroit show rooms a day or so after our 1915 announcement. Such scenes are daily occurrences here and in the hundreds of Maxwell dealers' display rooms throughout the country. It shows which way the wind blows. Do we need to emphasize that there is a demand for the 1915 Maxwell at $695?

We'll make 60,000 cars this season, and our factory equipment is such that we can swell this number by several thousands if needed.

And our policies and plans for assisting Maxwell dealers in selling and advertising are so thorough, so complete, that did our agency proposition offer no other attractions these alone are sufficient of themselves to warrant taking on the line.

We are just at the beginning of a new season; territory is fast being allotted, but in some localities there is still room for the type of dealer we desire.

Yours may still be open. Delay may mean disappointment. Address Sales Dept.

Which is the most Profitable—Promises or Deliveries?

Maxwell Motor Company, Inc., Detroit, Mich.

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The fact that he couldn't swim wasn't important to the passenger until he fell overboard. The fact that your Kelly-Springfield Tube floats when you put it in water isn't important to you until you realize that this means that real rubber has gone into that hand-made tube.



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Overland $1075

(*Model 80*)

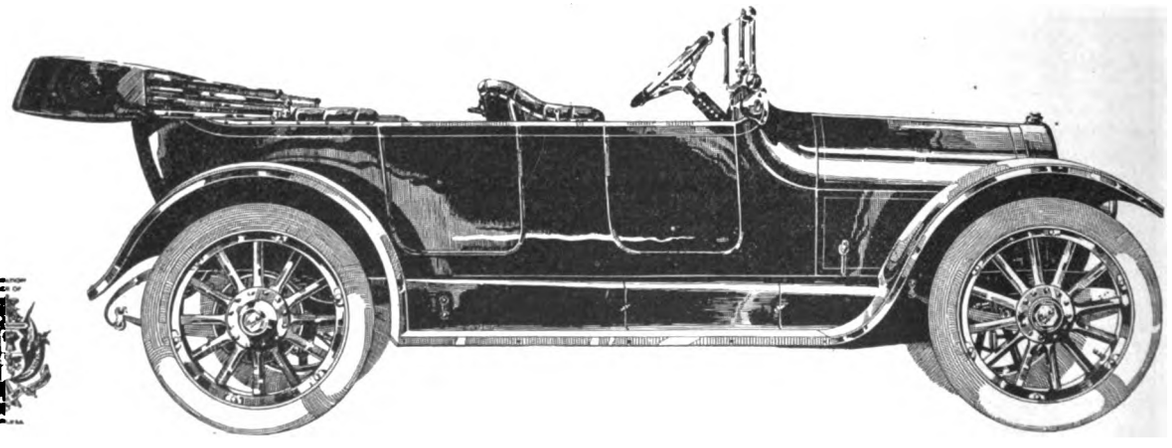
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More economical
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Upholstery; deeper and softer
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Electric starter
Electric lights
Electric horn
All electric switches on steering column
High-tension magneto—no dry cells necessary
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Rear-axle; floating type
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Easier riding
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Center control
Body:—beautiful new Brewster green finish
Mohair top and boot
High-grade magnetic speedometer
Robe rail, foot rest and curtain box

Handsome 1915 catalogue on request. Please address Dept. 50.

The Willys-Overland Company, Toledo, Ohio



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MOTOR WORLD

Vol. XL New York, U. S. A., Wednesday, September 9, 1914 No. 11

TIRE PRICES GO DOWN TO NEARLY NORMAL FIGURES

Five Companies Drop Their Lists to Figures in Force Before the War—11,000,000 Pounds of Rubber Came in in July.

In general, tire prices have come down practically to normal conditions. Five tire companies have reduced prices to those in effect before the European war, these including Firestone, Pennsylvania, Lee, Empire and Federal. Only four companies are now selling their tires at advanced rates. These are as follows: Fisk, 15 per cent; Goodrich and Diamond, 12½ per cent; Republic, 12½ per cent, and the United States Rubber, 12½ per cent. It is expected that one or two of these companies will reduce their prices in the near future.

According to the Custom House, port of New York, 11,534,864 pounds of India, Balata, Gutta percha and Gutta jelutong, rubber was imported during July. On July 23, the St. Louis left Southampton with a consignment of 67,000 pounds of plantation rubber for the Goodyear Tire & Rubber Co. On July 27, the Minnewaska left London with 95,000 pounds of plantation rubber for the same company. The B. F. Goodrich Co. has 150,000 pounds of plantation rubber on the Chalister, which left Singapore on July 30. It also has 150,000 pounds more of plantation rubber on the Ondrania, which left Singapore on August 12. Goodyear had 85,000 pounds of the same kind of rubber on the Olympic, which left Southampton August 5th, and also 33,500 pounds on the New York, which left the same place on August 10 and since have reached New York.

The Finance Minister of Brazil contemplates dispatching to the United States several vessels carrying rubber from Para, to bring back food and other products.

A letter has been sent to the various rubber industries, asking them to take up, through their respective sepators and representatives, with the State Department at Washington, the matter of getting exemption for cargoes of raw material that might be afloat in ships that left their ports before the formal declaration of war.

Extra Firestone Tire & Rubber Dividend

The Firestone Tire & Rubber Co. has declared a quarterly dividend of 3 per cent and an extra dividend of 2 per cent on the common stock; also a regular quarterly dividend of 1¾ per cent on the preferred stock. All the dividends are payable October 15 to stock of record of October 1. The previous declaration on the common stock was 2½ per cent.

The common dividend represents an advance in the rate from 10 per cent to 12 per cent per annum. The extra dividend has not been declared heretofore.

The gross sales of the company, in the fiscal year ended July 31, 1914, exceeded $19,000,000, against $16,000,000 in the previous year, $11,500,000 in the fiscal year 1912, $7,500,0000 in the 1911 year and $5,000,000 in the year ended July 31, 1910.

The company has $3,000,000 common and $1,000,000 preferred stock outstanding, so that earnings, which abount to approximately $3,000,000, are at the rate of nearly 100 per cent. on the common stock after the 7 per cent cumulative dividends an the preferred stock.

To Make Tires For Ford Cars.

A new tire making concern is being organized in Toledo, O., and application for a charter will soon be made to the Secretary of State. The concern will take for its name the Ford Tire Co., and will manufacture tires and tubes exclusively for Ford cars. It is said the company will be financed on the cooperative plan by Ford owners.

CHANGE IN PRICE OF GAS NOT LIKELY FOR 2 YEARS

Franco-German War Will Have No Effect on Market Value of Fuel, Says Standard Oil Man—Plenty of Crude.

That the Franco-German war, which is tearing at the vitals of foreign countries, will have no effect either now or in the near future upon the price of gasolene and lubricating oil, is the expressed opinion of an official high in authority in the Standard Oil Co. The price of gasolene may even go down a fraction of a cent, he says, and in the next two years it will not increase more than one cent a gallon and probably not that much.

According to this official, who is in a position which gives him ample opportunity to survey the oil field and keep a finger upon the pulse of events, there is plenty of crude oil now in sight to last during at least two years, during which time it is extremely unlikely that there will be any appreciable change in existing prices.

Speaking of conditions in the oil industry and the probable effect of the foreign war situation on the American market for oil and gasolene, he said:

"Of course it is impossible to state positively what the next two years may bring forth, but there is nothing in sight now which leads us to think that there is any likelihood of a shortage of crude within that period, or, in fact, for a much longer period.

"The only effect the war situation can have is to decrease the demand for gasolene and lubricating oil in the foreign field.

"It is obvious that Europe will not employ motor cars as extensively as has been the case in the past and naturally

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the demand will be tremendously decreased."

"That being the case, and if the price is influenced by supply and demand, why will there not be a lower figure than at present?" was asked.

"Because the existing price is about the lowest that gasolene can be sold with a profit to the refineries," was the answer. "Take New York, for example, where an enormous amount of gasolene is used. The Standard Oil Co. receives from 9 to 11 cents a gallon from garages and private tank stations, the difference in price being due to transportation costs. Some deliveries cost us more than others. We cannot sell our product for much less and realize a living profit."

"Is there any difference in the grade of gasolene sold in some New York garages for 14 cents and in others for 20 cents?"

"The Standard Oil Co. markets only one grade of gasolene, so there cannot well be any difference in the quality of the fuel.

"Is the Standard Oil Co. dependent upon Europe for anything used in connection with the production or marketing of either gasolene or lubricating oils?"

"Nothing but tin-plate, of which a certain amount comes from Wales. This, however, will not be seriously affected by the present trouble and it never will affect the price of gasolene and oil. Tin-plate is used by us in the containers for gasolene and oil. Aside from this I can think of nothing that will have any bearing on the American consumer. And this will not affect him," he added with a smile.

"Then you think that the price of gasolene and oil will remain about what it is now for the next two years to come?" persisted the questioner.

"I do not know that the price will be any lower, though it may drop a fraction. Two years is a long time, but I thing I can safely state that within this period the price of gasolene will not increase more than a cent a gallon—and I doubt if it will go that much."

War Claims For Confiscated Cars.

Americans whose motor cars were commandeered by military authorities in some of the European countries have begun filing claims with the State Department in Washington. Most of the tourists were given receipts for their cars, with the promise that they would be reimbursed. In most cases settlements are not expected before the end of the war.

THOMPSON MADE HEAD OF TERCENTENARY COMMITTEE

Automobile Club of America Secretary Appointed Chairman of Body to Formulate Pageant Plans—Parade Oct. 24.

At a luncheon, which was given on Friday last by the New York Commercial Tercentenary Commission at the Automobile Club of America, in West 54th street, New York city, Elmer Thompson, secretary of the club, was unanimously appointed chairman of the Automobile Auxiliary Committee, which will formulate plans for the motor car pageant which will be a prominent feature of the celebration. All told more than 40 guests were present.

According to tentative plans which have been adopted, there will be a mammoth motor car parade, which, it is proposed, will be divided into four sections, industrial, floral, grotesque and electrical. In each division there will be separate prizes for the winners selected by the judges. In addition there will be a grand prize. This probably will be a large gold medal.

The parade is to take place during the evening of Wednesday, October 24, and it was announced that already the Colgate company and the makers of the Thermos bottles have entered floats. An appropriation of $10,000 has been made for the purpose of illuminating the line of march.

The whole idea of the celebration is to commemorate the 300th anniversary of the beginning of trade on Manhattan Island, and although it has been thought advisable, in view of the foreign war situation, to postpone for at least one year the naval and military features, it seems likely that the remainder of the celebration will prove a success. There is a feeling that business in general, including the motor car industry, is in need of a stimulant of this sort.

Among those present were:

Alfred Reeves, National Automobile Chamber of Commerce; A. G. Batchelder, American Automobile Association; Fred. Wagner; Vice-President George F. Kuntz, Tercentenary Commission; William C. Poertner, Poertner Motor Car Co.; George H. Duck, Motor Truck Club of America; Elmer Thompson, secretary Automobile Club of America; Secretary De Forest of the Harlem Board of Trade; Secretary E. H. Hall, Tercentenary Commission; Harvey Robinson, Electric Vehicle Association of America; M. L. Downs.

Olds Reelected Head of Reo Companies.

At the annual meeting of the stockholders of the Reo Motor Car Co. and the Reo Motor Truck Co., R. E. Olds was reelected president, R. H. Scott, vice-president and general manager; D. E. Bates, secretary-treasurer; and R. C. Reuschaw, H. C. Teel, G. E. Smith, H. T. Thomas, together with the above officers were elected directors. The Reo Motor Car Co. declared a 15 per cent dividend, payable October 1, to stockholders of record September 20, while a 10 per cent dividend will be paid September 19, to stockholders of the Reo Motor Truck Co., of record September 12. The truck company has now a gross surplus of about $300,000 as against $97,000 at this time in 1913, and the stock of the company is now quoted at $13 as against $6.75 in 1913. It was stated that during the past year about 14,000 Reo cars and trucks were built, having a value of $16,000,000. During the year the concerns dispersed nearly $2,000,000 for materials bought from Lansing manufacturers and merchants.

A. C. A. Increases Laboratory Facilities.

The Automobile Club of America has increased its laboratory facilities considerably by moving it to a new position in the club building offering a greatly increased floor space. A new dynamometer will be installed, on which tests on the entire chassis may be carried out. This will be one of the Diehl rear wheel plants in all probability.

Herbert Chase, who was recently appointed to the position of chief engineer of the club, has organized an efficiency scheme by means of which the cars of the club members are kept up to their highest standard. Chase's former position of laboratory engineer is now filled by Ferdinand Jehle, who was formerly engineer of the Commercial Engineering Laboratory of Detroit, Mich.

Transportation Company Denby Agent.

The Transportation Engineering Co., 807 Woodward avenue, has taken the agency for Detroit and Wayne county for the Denby trucks. The company also handles the Universal and makes a specialty in looking into the requirements of concerns or companies desiring to use commercial vehicles, advising them what will be best for them to use.

The Transportation Engineering company also makes a specialty of providing supplies and has done so for about 50 local cartage companies.

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DEALERS PROTEST ORDER TO REMOVE CURB PUMPS

Detroit Trade Up in Arms Over Threatened Removal of These Conveniences — Business Men Lend Their Support.

Robert S. Theissen and Charles J. Rathi, of the Dix Avenue Garage, are well satisfied with their efforts in getting not only the motor car owners of Detroit, but business men and other citizens in all trades, to sign the petition which they have prepared and which is to be presented in due course to the mayor and the common council with reference to the removal of oil and gasolene pumps erected upon sidewalks.

"Up to date we alone have received about 2,000 signatures to the petition here in our place of business," said Robert S. Theissen," and from the information I have received from other quarters in the city there are now at least 40,000 signatures to the petition. I expect that there will be 100,000 within the next three weeks.

"Thus far nothing has been done by Director of Public Works Fenkel except to notify all owners of curb pumps that they must be removed on or after October 16. I do not think that it will get to that point, but even if our petition has no effect, the matter will be taken to the courts, and if necessary to the supreme court.

"Hundreds of business men with whom I have talked about the matter say that it would be a hardship on owners of either pleasure or commercial cars. Furthermore, it would tend to congest even more many streets which already are so congested that traffic is difficult. It would also be an unfair imposition upon many garages which have no facilities to handle a large number of cars. And other places of business which sell gasolene and oil would have to transform their stores or shops. There are probably 150 curb and sidewalk pumps in Detroit."

Following is the petition which is being circulated through the city:

To the Honorable, the Mayor and Common Council of the City of Detroit:

We the undersigned, citizens and taxpayers of the city of Detroit, hereby petition your Honorable Body for relief from the unnecessary hardship threatened to be imposed upon owners of automobiles and the general public by the operation of a certain resolution adopted by your Honorable Body July 28th, 1914, directing Mr. George H. Fenkel, Director of Public Works, to remove all encroachments from our streets, which resolution the said director has construed to contemplate and include the oil and gasolene pumps which certain garage owners have placed in front of their garages.

Whereas, the said Director of Public Works has issued orders that such gasolene and oil pumps be removed on or before October 16th, 1914, we desire to submit the following reasons why the said oil and gasolene pumps should be allowed to remain where they are at present located.

1. Said pumps are no more encroachments than are the light poles of the Public Lighting Commission; the telephone and telegraph poles of the telephone and telegraph companies; the poles carrying trolley wires; or mail box posts and mail boxes; an automobile taking gasolene at one of these pumps is no more an encroachment than is one parked in the same place.

2. The placing of these pumps inside the sidewalks means greater annoyance, inconvenience and danger to pedestrians and users of the sidewalks than does their present positions; because it would mean either that hose pipes would be carried across the sidewalks to the road side, or automobiles would have to cross and recross the sidewalks repeatedly to reach the pumps, if placed inside the sidewalks; and it would mean infinite loss of time to users of automobiles.

Therefore, we respectfully petition your Honorable Body that if the aforesaid resolution of July 28th, 1914, was intended to contemplate and include the aforesaid oil and gasolene pumps, and allow them to remain as they are at present located, near to the curbing.

Chalmers Makes Statement of Assets.

The Chalmers Motor Co.'s balance sheet as of June 30, 1914, shows its assets as follows: Cash, $1,039,491; notes and accounts receivable, less reserve, $939,703; merchandise inventories, less reserve, $3,473,162; prepaid expenses, $23,759; stock of other companies, $527,599; sales branches, $30,961; plant and equipment, $2,113,278; good will, $1; total, $8,147,958.

Liabilities — Current merchandise accounts, $560,860; deposits, dealers' contracts, $93,408; accrued accounts, $32,278; reserves, $200,881; preferred stock, 1,319,300; common stock, $5,000,000; surplus, $941,229; total, $8,147,958.

According to these figures $180,700 of the preferred stock has been retired, or $5,700 more than is required per year. Adding this retired preferred stock to the surplus, $941,229, the company would have earned $1,121,929.

Houpt Acquires Mitchell Line.

The Mitchell-Lewis Motor Co., Racine, Wis., hereafter will be represented in the Metropolitan District by Harry S. Houpt, Inc., at present New York distributer of the Lozier line. The addition of the Mitchell line will in no way affect Houpt's Lozier interests nor will any changes be made in the existing Mitchell subdealers. The territory which Houpt has acquired includes, in addition to the Metropolitan District, New York state to Kingston, Long Island, Connecticut to New Haven, and Eastern Pennsylvania, including the city of Philadelphia.

NEW YORK EXPORTS DROP; IMPORTS SHOW INCREASE

Exports for June and July, 1914, $249,915 Behind Those for Same Months in 1913—Imports Gain by $33,724.

Exports of motor cars, commercial vehicles and their parts from the port of New York during the month of July amounted to $947,147, against $1,197,062 for July, 1913, a drop of $249,915.

The imports for July, 1914, amounted to $116,837, as compared with $82,133 for that month in 1913, a gain of $34,704

June exports were a little higher than those of July, amounting to $1,399,125, or a gain of $451,978. The imports during that month amounted to $108,579, or $26,446 lower than July.

The total figures for the month of August have not been completed as yet. The following figures will give the number of cars and commercial vehicles exported and imported during June and July of 1913 and 1914:

	1914—July Exports		—1913	
	No.	Value	No.	Value
Cars	840	$638,452	1,183	$1,037,680
Trucks	32	72,102	12	18,344
Parts		236,593		141,038
Total		$947,147		$1,197,062

	1914—July Imports		—1913	
	No.	Value	No.	Value
Cars	9	$17,384	30	$71,543
Parts		99,453		10,590
Total		$116,837		$83,133

New Pope Company To Make Parts.

Parts for Pope-Hartford passenger cars, trucks and fire apparatus will continue to be made in Hartford, Conn. The purchase of the business in its entirety by the Pope-Hartford Co., of Connecticut, a new corporation, includes all the parts finished and in process, tools, jigs, fixtures, patterns, drawings, tracings, formulas, and everything pertaining to this important branch of the business. The repair and service department formerly operated by the Pope company will also be continued by the new company at the main works on Capitol avenue. This department will be manned by experts selected from the best men in the employ of the Pope Mfg. Co.

The Pope-Hartford Co. of Connecticut is composed of men who have been connected with the design, manufacture

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and sale of these cars since the production of the first model in 1902. The officers of the new company are: Wilbur C. Walker, president; Ralph A. Barkman, vice-president; Charles E. Walker, treasurer, and Joseph A. Taylor, secretary. The capital stock authorized is $200,000, divided into 200 shares, par value $100. There is $60,000 of preferred stock and $140,000 of common stock. The amount of capital stock with which the corporation intends to begin business is $10,000. The incorporators are: W. C. Walker, Charles E. Walker, of Hartford, and Ralph A. Barkman, of West Hartford.

One Imperial Model Reduced $415.

Two sixes and a four will be included in the line manufactured for the coming season by the Imperial Automobile Co., Jackson, Mich. The four, model 64, costs $1,085 with either roadster or touring body, which is $415 less than the 1914 price. Model 56, the larger of the two sixes, costs $2,200 with touring or roadster body. The light six will cost $1,535.

The motor of the four is block cast with cylinders 3¾ x 5; it has Stromberg carburetter and Gray & Davis starting-lighting system. The wheelbase is 115 inches and tires 32 x 3½ front and rear on wood wheels. The Imperial rear axle is of the full-floating type. Steering is at the left and control center.

The model 56 six has its cylinders cast in pairs, the bore and stroke being the same as in the four. Splitdorf magneto, Stromberg carburetter and North East starting and lighting system are fitted. The wheelbase is 130 inches and the tires 36 x 4½ front and rear.

In the light six the motor will be a block-cast Continental, 3¾ x 5, with Stromberg carburetter. The car will have Gray & Davis starting and lighting system and wood wheels with 34 x 4 tires front and rear.

Two Models in Chevrolet Line.

Two models, the Baby Grand touring car and the Royal Mail roadster, constitute the new line of the Chevrolet Motor Co., Flint, Mich. The touring car sells for $985 with electric starter and $875 without. The roadster costs $860 with starter and $750 without. Regular equipment includes electric lighting when no starter is fitted; the Auto-Lite system is used throughout. Both cars have four-cylinder block Mason motors, 3 11/16 x 4, with Simms high tension magneto and Zenith carburetter. Walker-Weis floating rear axle, wood wheels with 32 x 3½ tires front and rear, 106-inch wheelbase, left steer and center control.

INCREASED FALL BUSINESS IS PREDICTED BY CHAMBER

N. A. C. C. at Directors' Meeting Concludes War's Depressing Effect Has Worn Off—Disapproves Patent Controversies.

Although the Franco-German imbroglio was indirectly responsible for a considerable falling off of business in the motor car trade during the first two weeks of August, the depressing effect of the foreign situation has now practically worn off, and, according to advices received and discussed at the regular monthly meeting of the Board of Directors of the National Automobile Chamber of Commerce on Tuesday last, the promise of greatly increased fall business has resulted in a generally optimistic feeling. Shipments for the last two weeks of August were far ahead of those for the previous two weeks.

As a part of the routine business which occupied the attention of the representatives of the 93 motor car manufacturers who were present at the meeting there was a most interesting report from the Patents Committee relative to the automobile patent situation and also in regard to the proposed changes in the patent laws at Washington.

The directors adopted a resolution expressing their disapproval of various accessory manufacturers having controversies among themselves on patent rights, bringing suits againt the makers of motor cars. The resolution is as follows:

WHEREAS members of the National Automobile Chamber of Commerce have been annoyed and embarrassed by threats of patent infringement and by patent infringement suits brought against them or against their customers and users of their cars by certain manufacturers of automobile accessories and parts; and

WHEREAS it is unnecessary for such manufacturers of accessories and parts to bring suits against automobile manufacturers, venders and users of motor cars in order to assert their rights under their patents, inasmuch as such manufacturers of accessories and parts have ample recourse against the infringing manufacturers of such accessories and parts;

THEREFORE, BE IT RESOLVED, That the Directors of the National Automobile Chamber of Commerce regard any such suits by accessory and parts manufacturers against motor car manufacturers, venders or users of motor cars as being unwarranted, unfriendly and against the best interests of the industry; and be it further resolved that the Motor and Accessories Manufacturers Association be advised of the attitute of this Chamber on this subject with the end in view of giving all manufacturers of accessories and parts due notice of the attitude and feeling of the National Automobile Chamber of Commerce.

The Traffic Department figures showed that during August, 1913, the automobile industry shipped 4,469 carloads while last month the shipments were 6,870, most of which were made during the last two weeks of the month.

It was decided that the present was an inopportune time for a convention of commercial vehicle manufacturers and a date for holding one will probably be decided upon for late in the year.

Indianapolis Fall Show Opened.

Governor Samuel M. Ralston at 2 o'clock on Monday formally opened the full motor show of the Indianapolis Automobile Trade Association at the Indiana State Fair. This is the second show of the association has given this year, the first having been given early in the spring, and is the first extensive showing of 1915 cars that has been made in the United States.

The show is being held in a huge tent at the fair ground, near the Coliseum. The tent contains 39,800 square feet of space, of which 30,000 square feet is available for exhibits. There are 51 exhibitors, 4 having special exhibits, 11 showing accessories and the remainder pleasure and commercial cars. Only 1915 cars are being shown.

Paterson Reduces Price by $115.

With a reduction of $115 in its price, the new model Paterson has made its appearance, the price being $1,085 instead of $1,200 as formerly. The motor is a block-cast Northway, 3½ x 5, with Delco starting-lighting system and magneto and Schebler carburetter. The wheelbase is 112 inches and the tires are 33 x 4 front and rear, on wood wheels. Three-quarter floating Weston-Mott rear axle is used. Steering is left and control center. Only one body is mounted, a streamline touring type.

Cartercar Touring and Roadster, $1,250.

Adhering staunchly to the friction drive that it has so well developed, the Cartercar Co., Pontiac, Mich., brings out its latest chassis with either touring or roadster body at $1,250, with Northway block motor, 3½ x 5, Schebler carburetter and Delco triple unit starting, lighting and ignition system. The wheelbase is 106 inches and the wheels of wood. Axles are of Weston-Mott make, the rear being three-quarters floating. Tires are 33 x 4 front and rear. The wheelbase is 106 inches.

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NEW OLDSMOBILE MODELS SELL FOR LOWER PRICES

Both Four and Six Continued With Detail Improvements—Left Steer and Center Control Adopted for Larger Machine.

Substantial price reductions are the most important changes made by the Olds Motor Works, Lansing, Mich., in bringing out its new models. As in 1914, there will be two chassis models, a four and a six.

The price of the four has been reduced from $1,350 to $1,285, and at this figure may be had with either touring or roadster body, the latter being new. The six in 1914 was built with either 5- or 7-passenger body, at $2,975 and $3,150, respectively. For 1915 there will be but one body, seating 7 passengers, and this will be sold at the price of the older 5-passenger machine, $2,975, which amounts to a reduction of $175.

Most important of the minor changes in the four is the lengthening of the wheelbase from 110 to 112 inches. This does not affect the size of the body; the effect is to carry the front axle forward in line with the radiator instead of 2 inches back of it. The 3½ x 5 block Northway motor, with its compact overhead valve system and unit construction with the gearset, remains unchanged.

In the Delco lighting, starting and ignition system the most important change is the addition of an automatic spark control to take care of slight variations of motor speed within the limits set by the spark lever on the steering wheel.

The transmission elements include a cone clutch, three-speed gearset, enclosed propeller shaft and full-floating rear axle. Tires are 33 x 4, the rear tires being non-skids. The equipment consists of one-man top with Jiffy curtains, rain-vision ventilating windshield, clock, electric horn, Stewart speedometer and the usual tools, pump, jack, and so on.

In the case of the six there are several changes. Steering has been shifted to the left and control to center; the body has been dropped 2½ inches and the hood and cowl slopes slightly altered to improve appearance. Cylinder jackets have been made more capacious, the radiator is 4 inches deep instead of 3½ and the fan is 18 inches in diameter instead of 14. The carburetter now is a Marvel and is fed by the Webb Jay vacuum system. The motor is unchanged in the main, being a Northway with L-head pair-cast cylinders, 4¼ x 5¼, built as a unit with the gearset. The electrical equipment is similar to that of the four, though of greater capacity where necessary.

The propeller shaft is not enclosed, torque and drive being taken by a pressed steel triangular member. The rear axle is floating. Tires are 36 x 5, non-skids in the rear. The wheelbase is 139 inches. The equipment is about the same as that of the four.

Plan Reorganization of Standard Roller.

In conjunction with manufacturing and banking interests in Philadelphia, New York and other Eastern cities in the East, S. S. Eveland, former president of the Standard Roller Bearing Co., Philadelphia, Pa., which went into the hands of receivers last year, has plans under way for a reorganization of the company.

At the headquarters of the Eveland Engineering & Mfg. Co., Mr. Eveland could not be seen. It was announced, however, that such a plan was nearing completion, but until the preliminaries were cleared up it was not possible to get more than a mere outline of what was to be accomplished.

The only information forthcoming was to the effect that a substantial payment to the creditors' committee had been made to bind the bargain.

It is understood that the plan of reorganization contemplates the payment to the company of a large sum for working capital, and also the payment to creditors of a certain percentage of their claims, including debenture holders, banks and mercantile creditors, the balance to be paid gradually. All stockholders will retain an interest in the concern.

Rotary Traffic Plan For New York.

Traffic policemen are to try, at 57th street and 5th avenue, New York, a new rotary plan for moving vehicles at congested street intersections. It is precisely such a system as has been in use for years at Columbus Circle. Pedestrians will be sheltered by five isles of safety and vehicles kept moving about a circle, the traffic officer in a crow's nest in the middle.

Sparks-Withington Adds 50,000 Sq. Feet.

The Sparks-Withington Co., Jackson, Mich., has just completed a structural steel and concrete building at the rear of its plant which gives it 50,000 square feet additional floor space for the exclusive use of nickel plating and shipping departments.

CHEVROLET IN TEST MAKES 27.9 MILES ON A GALLON

Roadster in Touring Trim Climbs 8 Per Cent Grade on High Gear at 16 m. p. h.—Carburetter and Equipment Stock.

A Royal Mail model Chevrolet roadster, operated over the roads of Central Park in New York city, ran 27.9 miles on a measured gallon of gasolene. The car tested was a stock model taken from the Broadway salesroom and fitted with regular equipment, except that the generator was disconnected at the time of the test and the carburetter fitted a one-inch Stromberg Model K with a 64 needle. A hot air attachment was fitted.

The test was observed by J. E. Schipper of Motor World and was carried out under strictly touring conditions. The average speed maintained was 21.6 miles per hour. The brakes were used frequently owing to traffic conditions along the course, which was all in Central Park, traveling north on the west drive and south on the east drive. The carburetter was adjusted for service conditions and did not have the gasolene cut down any more than would be done on the average car. In fact, on the same adjustment the car climbed the Abbey hill on direct drive on a minimum speed of 16 miles per hour. This is a gradient which averages approximately 8 per cent.

During the test the car was declutched on the steeper hills, allowing it to coast with the motor idling, and the interconnection which is generally used between the clutch and brake operating on the same pedal was removed for coasting freedom. The clutch slipped slightly when the car was quickly accelerated. The weight of the car complete, with two passengers, was 2,585 pounds. The tires were Goodyear, 30 x 3½ Allweather, non-skid tread all around, with the rear tires inflated to 70 pounds and the front to 60 pounds. Gasolene was .71 Beaume at 60 degrees Fahrenheit. The odometer was a Stewart-Warner. The gear ratio on direct was 4 to 1.

The Chevrolet, Model H-2, four-cylinder engine used on the Royal Mail roadster has its valves in the head. It has a bore of 3 11/16 inches and a stroke of 4 inches. In this incidence the car was operated with the windshield in one-half position and the certified gallon measure was carried on a bracket on the top of the windshield.

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PROMINENT MEN IN TRADE WHO ASSUME NEW DUTIES

Resignations and Promotions That Serve to Place Many Workers in New Places—Few of Them Leave the Industry.

F. B. Packwood has been appointed western sales manager for the Briggs-Detroiter Co., Detroit, Mich. He will make his headquarters in Lincoln, Neb., where heretofore he has been distributer for Krit and Winton cars.

Charlie Gamble, for several years with the Indianapolis branch of the Nordyke & Marmon Co., has been transferred to the Chicago office, the vacancy thus created being filled by W. A. Tingler.

Wallace M. Williams, for the past two years advertising manager of the Franklin Automobile Co., Syracuse, N. Y., has resigned that position and retired from the motor car industry. He will become identified with the Internation Liberty Union of Covington, Ky.

William D. Myers has been made general sales manager of the Cole Motor Car Co., Indianapolis, Ind., his duties commencing September 1. Formerly he was assistant to Sales Manager George W. Bennett of the Willys-Overland Co. and latterly has been assistant general sales manager of the Stutz Motor Car Co.

R. W. Rodgers, who was formerly associated with L. A. Van Patten, New York Saxon distributer, has been appointed manager of the Saxon Motor Car Co., which took over the Van Patten agency. At the same time Edward Terry has been appointed manager of the local sales department and A. C. Koch manager of the wholesale business department.

American Voiturette Receiver Appointed

The Detroit Trust Co. has been appointed receiver for the American Voiturette Co., Detroit, Mich., builder of the Car-Nation small car and the Keeton car. H. L. Stanton, who is in charge of the receivership, states that all creditors are being notified by circular letter of the situation and that work will be immediately begun on making inventory and issuing a statement of the assets and liabilities of the concern. The order of the appointment of the receivership was signed by Judge Sessions of Grand Rapids and the receivership is in the United States District Court, eastern district of Michigan in equity. The application for the receivership was made by a creditor of the organization.

The receiver states that the liabilities according to the company's statement approximate $231,000. No statement of assets is made, but there is material for 600 Car-Nations on hand in construction and material for 100 Keetons. The receiver will carry on manufacture of these parts as soon as the complete inventory is taken.

Since April 1 the company has manufactured 1,200 Car-Nations and has distributed these through more than a dozen centers.

Clayton Bill Passed by Senate.

The Senate has passed the Clayton bill by a vote of 46 to 16. It has been radically changed by the Senate, however. One of the most important changes was made on the recommendation of Senator Cummins. The bill as it came from the House carried a prohibition against the issuance of any restraining order or injunction to prohibit any person or persons "from attending at or near a house or place where any person resides or works or carries on business or happens to be for the purpose of peacefully obtaining or communicating information." The Senate Committee on Judiciary concluded that this language would legalize what is known in labor and strike circles as "picketing," and struck the language from the bill.

Voluntary Dissolution For Benham.

A voluntary petition for dissolution has been made by the Benham Mfg. Co., which has been making the Benham six, which was formerly known as the S. and M. The petition was made upon the suggestion of the creditors' committee and the Union Trust Co. has been appointed receiver and will decide after verification of the concern's condition and the inventory what the best policy will be concerning the future of the company. According to the latter's statement, the liabilities amount to $76,889 and the assets to $109,000.

Six Models of Detroit Electrics.

The complete line of the Anderson Electric Car Co., Detroit, Mich., manufacturers of the Detroit electrics, will consist, for the coming year, of a cabriolet roadster at $2,650, a rear drive brougham at $2,850, a duplex drive model at $3,000, forward drive model at $2,950, a large rear drive brougham at $2,950, and a small rear drive brougham with bevel gears at $2,600. Wire wheels are optional.

MISSOURI MAXWELL MEN VIEW MAXWELL MOVIES

Nearly 150 Representatives See "Molten Steel to Automobile" Film Reproduction—Factory Men Urge Dealer Cooperation.

About 150 Maxwell dealers and subdealers and some invited guests last week attended a dinner party given by the St. Louis (Mo.) representatives of the Maxwell Motor Sales Corporation, E. W. Fuhr and L. A. Hannan. The real excuse for the gathering was the disclosure for the first time in that section of the Maxwell movies and a general talk by men of the home offices no the 1915 business outlook, explanations about the new car, talk on salesmanship and how cooperation could best be obtained.

District Supervisor Charles R. Newby spoke upon the relations between the manufacturer and the agents and gave some good advice and pointers about the things to do and those not to do, how to succeed and how failure may be brought about or averted.

Among the dealers present were the following:

From the State of Missouri:

W. A. Stark, Centertown; C. O. Short, Hiberia; P. S. Ramsey, Hiberia; Jas. Pines, Salem; A. W. Gerdeman, High Hill; A. N. Barb, Downing; N. G. Williams, Kansas City; W. H. Jaycox, Watson; L. P. Hoffman, Moberly; W. T. Ragan, Williamstown; T. L. Dunlap, Springfield; C. S. Gatchel, LaPlata; G. V. English, California; J. G. Hughes, California; W. L. Freeman, Glenwood; John Hombs, Glenwood; W. R. Holms, Mexico; Walter Daehn, Valley Park; C. A. Krumsick, Washington; R. H. James, St. James.

From the State of Illinois:

Jacob Hall, Galisha; C. E. Stein, Brownstown; John Feitsam, Oakville; Arthur Mohr, Oakville, C. P. Casey, Carrollton; H. P. Craigcroft, Vandalia; Orlie E. King, St. Peter; A. F. Meyer, St. Peter; H. W. Haynes, Rockford; F. S. Gay, Rockford; Henry Strobel, Ramsey; L. P. Weinell, Columbia; W. T. Kennedy, Mound City; M. O. Finks, Shelbyville; F. G. Turner, Pittsfield, Morris Turner, Pittsfield; Ed Keller, Barry; Berl Wike, Barry; Simon Mayer, Barry; John Penn, Belleville; Peter Bernhardt, Edwardsville; Philip Liebler, Edwardsville; Willis Wright; Edwardsville; J. W. Cassela, Alton; W. N. Cassela, Alton; J. G. McCurdy, Marissa; Frank Caulter, Marissa; Tom Cooper, Hamilton; J. Cole, Marion; Chas. Procasky, Belleville; H. E. Herbert, Quincy; E. A. Parks, Sandoval; F. Barton, Cairo; W. W. Wilburn, Olive Branch.

Robie Company Now In York, Pa.

The Robie Motor Car Co., which had temporary quarters with the Massnick-Phipps Mfg. Co., in Detroit, has moved to York, Pa., where it will manufacture a light car.

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Keeping Repair Schedules

"That dealer has not told me the truth once," was the curt comment of an owner recently, who had left his car with the dealer's service department to get some work done on it. The owner had been in the habit of turning it over periodically to the dealer to go over it carefully, and being a methodical business man, was invariably disappointed when calling at the dealer's place of business at the appointed time, to find his car not ready for him. It was generally a wait of 15 minutes, once over one-half hour and at other times 20 minutes or more.

The 15 or 20 minutes that an owner waits for his car, after the time it has been promised for him, are never good advertisements for the dealer. If the owner is a business man, and generally when he insists on a definite time of delivery he is such, he has arranged his work for the day, and if he expects his car at 1:30, he perhaps had hurried his entire forenoon program along to be ready at that moment. Often the dealer overlooks this. It is bad business to do so. Schedule is the basework of many industries and when the dealer sets this at naught, the owner only continues to do business with that dealer because he cannot get a better place to go.

Slow Habit Easily Formed

Keeping a schedule is one of the best business mottos that a dealer can hang up in his repair department. It makes his men work, he gets his money's worth and gives it in return. It is exceedingly dangerous when a repair department gets in the habit of being one-half hour slow in finishing jobs. Take the case of the dealer who puts the time on the repair card at which the work must be completed. If the work is not done at this time, the first offence is generally considered more or less serious by the workmen but each successive offence starts the bad habit, and soon it will be the exception when a job will be completed at the required time.

This failure to finish a repair job on schedule is one of the strongest bids to lack of efficiency that any manager of a repairshop can possibly court. Every time a job is behind, one nail is driven in the bad-habit regime that is sure to invade such a repair department.

Up to Department Head

It is not impossible to live up to a schedule. The head of the department makes the schedule. He is a party in determining the hour at which the work must be done. If it cannot be done at 12 noon, then it is within his power to make it 1 or 1:30. Whatever time he sets, he should adhere to it. He cannot afford to do otherwise. He is a loser every time he casts his schedule aside. He is not only losing money but is cutting down the efficiency of his own departments. It is just as easy to maintain a schedule as to break one. Quite frequently a repair force is more disrupted by trying to finish a job one-half hour late, by bringing men of two off three other jobs, than it would be if the scheme of doing work were properly laid out when the job was started.

The failure to maintain a schedule in repair work can only be laid to the foreman of the department. He is the commander of the situation. He makes the schedule, he decides what part of his force shall work on different jobs, and he alone can only be logically responsible for breaking it.

Standard Stock Materials

"I called at four garages before I could get material for a 1-inch fan belt." This experience of an owner suggests the necessity of the garageman carrying in stock a few standard supply materials. Had this happened in a small city, it could be overlooked, but occurring within Greater New York, it suggests the necessity of better stock keeping systems.

Keeping up stock is just as important in a garage as in a grocery or department store. The garage owner should have some system of checking up, rather than operating on a hit-and-miss method of buying goods and putting them on the shelf until called for. Lamp wicks are not very important, yet one-half the garages do not carry the standard sizes in stock. There are many other small articles that the garage fails to carry, with the result that the car owner attempting to purchase these necessaries once in a while from the garageman soon realizes that he will have to go to other stores for them. The net result is that the garageman is losing trade. The car owner is building up the habit of buying from the other place, and soon he will not think of going to the garage for any of the small motor necessities.

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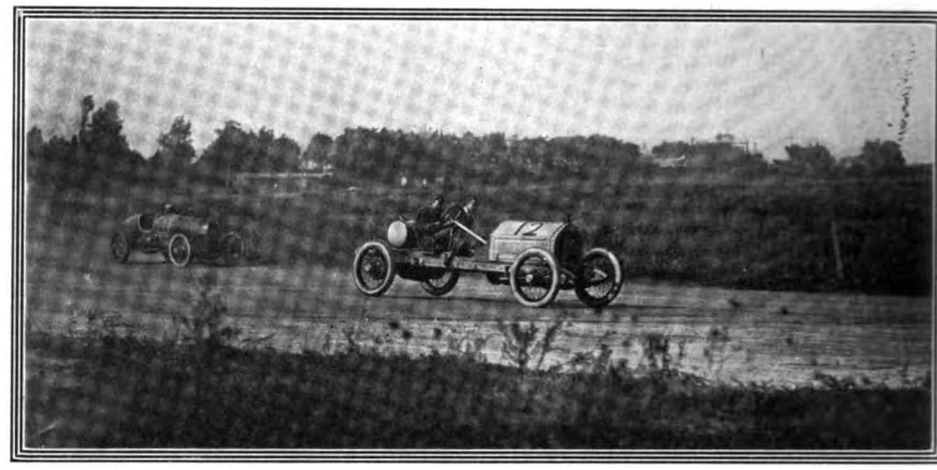
De Palma Stars at Two-Day Seaside Meet

Both 50- and 100-Mile Races to Mercedes Pilot.

Le Cain, Chevrolet Driver, Performs Well.

Great Labor Day Crowd Packs the Grandstands.

Dearborn Wrecks Peugeot During First Day.



Morton pushing his Mercer behind Dickinson and his Stutz in the backstretch in one of the shorter races the first day

Ralph De Palma, piloting a Mercedes, was the bright particular star at the two-day racemeet staged by the Motor Dealers' Contest Association at the Brighton Beach (N. Y.) seaside track, Saturday and Monday, September 5 and 7.

With only two exceptions, De Palma won every event in which he started, the only races which he lost being the two free-for-all handicaps in which he was unable to overcome the advantage of those who were pitted against him. Not only did he win the 100-mile Labor Day Sweepstakes, which was the feature event on Monday, forcing his Mercedes 100 times around the mile circuit in 1:40:15, but he won the 50-mile "warming up" trip which was run off on Saturday and was the feature event of that day. In this race his time was 50:42⅘. In several of the races, better time was made than ever before on the old Brighton Beach track.

During the two days of racing there was one untoward incident. When Frank Dearborn was driving his Peugeot in second place in the 50-mile feature event on Saturday, the right front tire blew out, precipitating the car, after a long skid, through the outer fence on the grandstand turn.

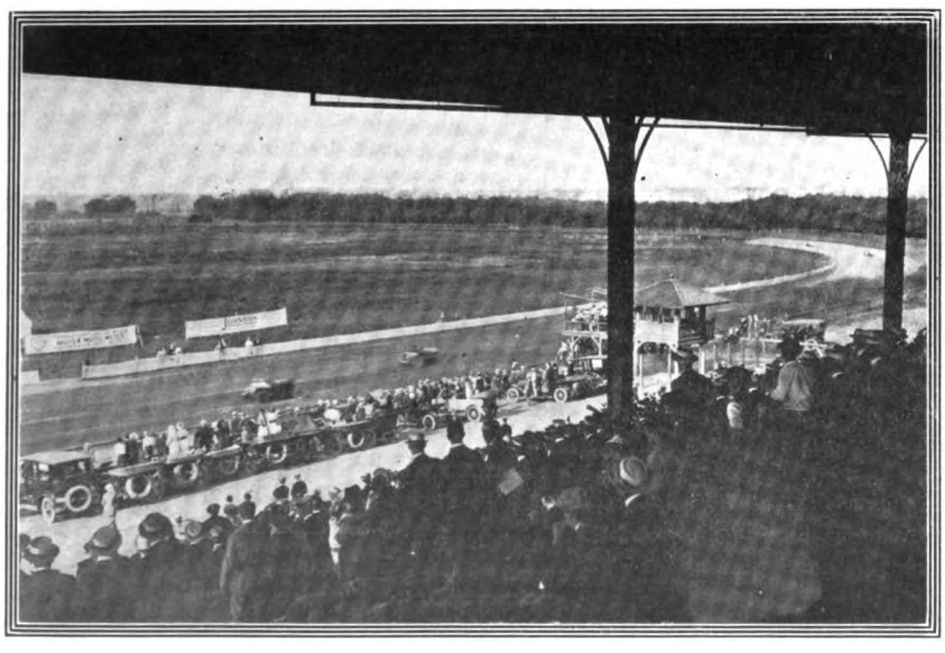
Almost immediately the crowd in front of the grandstand rushed in a body to the scene of the accident, despite the futile protests of the ordinarily efficient course guards. In a few minutes it was impossible to see either car or occupants. Later it developed that Dearborn had sustained a fractured skull and internal injuries, and that Harold McCarthy, his mechanician, was quite seriously injured internally.

At the hospital it is reported on Tuesday morning that Dearborn has little or no hope for recovery; he has remained unconscious since the accident. McCarthy, however, who was less seriously injured, a splinter of one of his ribs having punctured his lungs, has greatly improved and quite likely will recover.

On Monday, the stands and parking spaces were packed; a crowd of approximately 15,000 assembled to witness the racing.

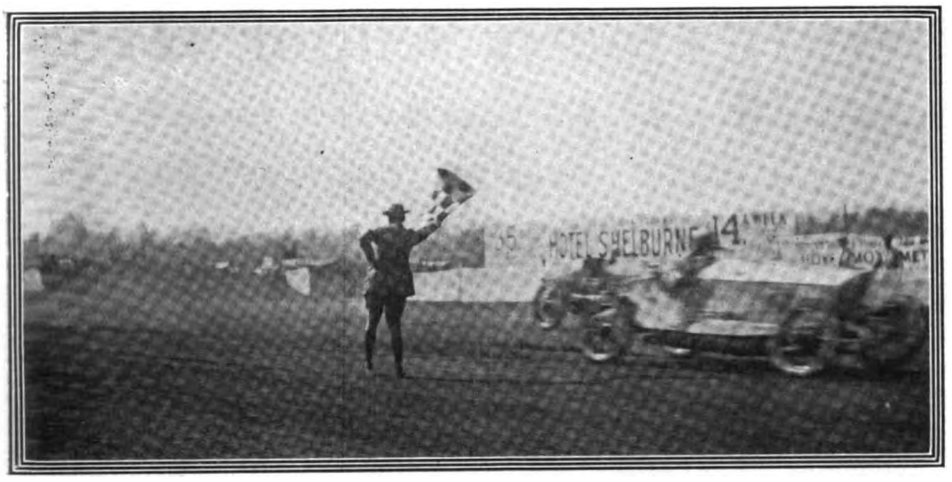
At the time of the accident, Dearborn was in his 41st mile and was racing to make up time which he had lost because of a stop for tires. Throughout the race, up to this point, it had been a see-saw affair between De Palma, Dearborn and Le Cain. De Palma led up to the ninth mile when Dearborn pushed ahead of him, covering the 10 miles in 9:38⅗. De Palma led for the next two miles when Dearborn again assumed the lead and held it until the 19th mile. In the 20th mile, which was passed in 18:59⅘, De Palma again assumed the lead, Dearborn dropping back because of tire trouble to third place with De Clain second. De Palma's time at 25 miles, 23:47⅗, is the fastest ever made on the track. De Palma held his lead then until the 35th mile when Dearborn again forged to the front for three miles.

At this point tire trouble held back both De Palma and Dearborn, both of whom were in the paddock at the same time. This permitted Le Cain, in a Chevrolet, to assume the lead, which he held from the 38th mile to the 46th, practically unchallenged. In the meantime De Palma was forcing his mount to the limit



The crowd in the grandstand cheering De Palma as he passes Dearborn in his Peugeot during the 25-mile race on Saturday

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De Palma gets the checkered flag only inches in front of Morton (Mercer) in the 10-mile event on Saturday

and in the 47th mile caught and passed the flying Chevrolet pilot.

De Palma then held the lead to the finish, his time being 50:42⅕. Le Cain, in his Chevrolet, finished in 50:55, after having given an exceptionally creditable performance considering the much larger cars against which he drove.

Of the other events on the program on Saturday, the 10-mile class C race, which was won by De Palma in 10:20⅗, proved the most exciting. For 9½ miles De Palma and Morton, in a Mercer, raced practically wheel to wheel; only at the finish line did De Palma forge ahead, winning by inches. Otherwise there was practically no competition, the winner in each case running away from his field. In the 25-mile free-for-all De Palma bettered his own time of 24:35, made last year with a Mercer, by covering the distance in 24.08⅗.

On Monday conditions were much the same, there being little competition except in the first event, which De Palma took. In this race the wily Italian permitted Morton, in his Mercer, to remain practically beside him during 9 of the 10 miles.

Reversing his previous practice of driving only fast enough to beat out his nearest competitor, De Palma early assumed the lead in the 100-mile Labor Day Sweepstakes, and at the finish had open a gap of 5 miles between himself and Bergdoll in his Erwin. The absence of Dearborn and his Peugeot robbed the contest of much of its interest, for next to De Palma's Mercedes the Peugeot was undoubtedly the fastest car on the track.

For the first 10 miles the order of the procession was De Palma, Morton and his Mercer and Bergdoll in his Erwin, with De Palma easily and quickly drawing ahead. There was little change at the 20th mile, when Morton had tire trouble and lost three laps; shortly after the 30th mile Le Cain, who with his Chevrolet had done such excellent work the previous day, was forced to retire.

Only four cars were left in the race at the 50-mile mark. Jessop, in his Chevrolet, although far behind the leaders, kept up his plucky fight. At the 62nd mile a tire threw off Dickinson's Stutz(permitting Jessop to make up some of his lost time. A little later Erwin blew a tire and lost nearly three laps making the change, thus permitting Jessop to creep up further. At this stage De Palma was so far in the lead that interest in the race centered about the contest for second place, Jessop and Bergdoll having the fight all to themselves. At the 91st mile, Jessop moved into second place for the first time. In the next three miles the two cars changed places twice. In the next mile Bergdoll had tire trouble and Jessop appeared certain of second place; tire trouble, however, slowed him and permitted Bergdoll to finish second.

Saturday, September 5.

The summary:

10 miles, class C, 161-300 inches—Won by De Palma, Mercedes; second, Morton, Mercer; third, Le Cain, Chevrolet. Time, 10:20⅗.

10 miles, class C, 301-600 cubic inches—Won by McCarthy, Peugeot; second, Morgan, Stutz. Time, 10:34⅘.

25 miles, class E, free-for-all—Won by De Palma, Mercedes; second, Jessop, Chevrolet; third, Bergdoll, Erwin. Time, 24:08⅗.

10 miles, class D, free-for-all handicap—Won by Dearborn, Peugeot (10 sec.); second, Le Cain, Chevrolet (40 sec.); third, De Palma, Mercedes (scratch). Winner's net time, 9:02⅘.

50 miles, class E, free-for-all—Won by De Palma, Mercedes; second, Le Cain, Chevrolet; third, Galvin, Marquette; fourth, Jessop, Chevrolet. Time, 50:42⅗.

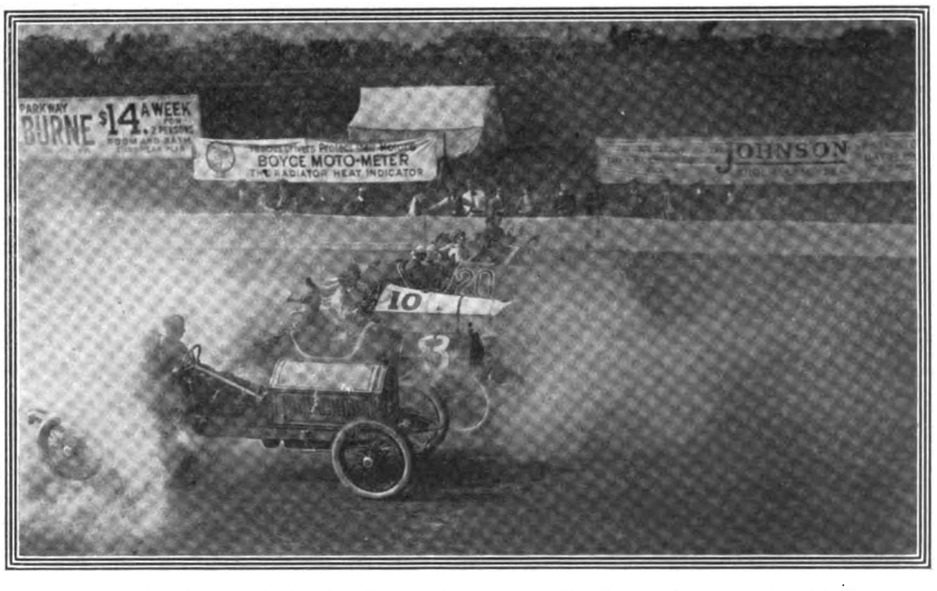
Monday, September 7.

10 miles, class C, 161-300 cubic inches—Won by De Palma, Mercedes; second, Martor, Mercer; third, Bergdoll, Erwin. Time, 10:00⅘.

10 miles, class C, 301-600 cubic inches—Won by Dickinson, Stutz; second, Galvin, Buick; third, Geblin, Lozier. Time, 11:02⅗.

10 miles, class D, free-for-all handicap—Won by Le Cain, Chevrolet (40 sec.); second, De Palma, Mercedes (scratch); third, Morton, Mercer (20 seconds). Winner's time, 10:14⅕.

100 miles, Labor Day Sweepstakes, class D, free-for-all—Won by De Palma, Mercedes; second, Bergdoll, Erwin; third, Jessop, Chevrolet. Time, 1:40:15.



The line-up for the 50-mile free-for-all race that went to De Palma after a battle with Dearborn (Peugeot) and Le Cain (Chevrolet

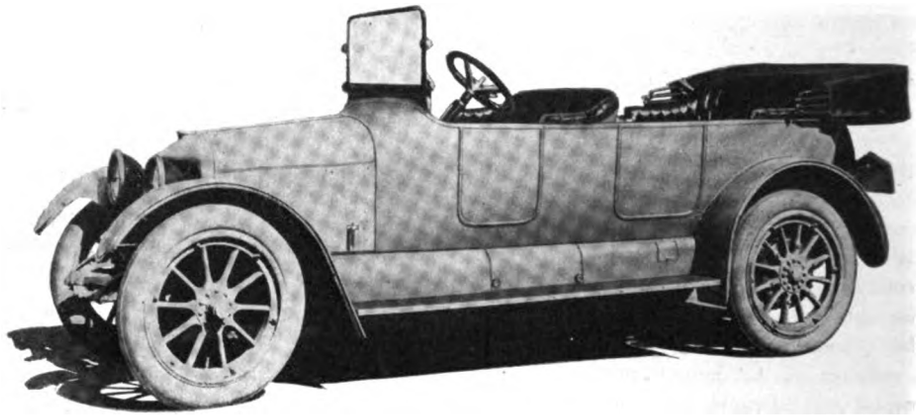
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Premier-Weidely 1915 Models Sell for $2700

Simple Six-cylinder Motor Made Even Simpler.

Chassis Changes Confined to a Few Details.

Three Body Types Mounted on Single Chassis.

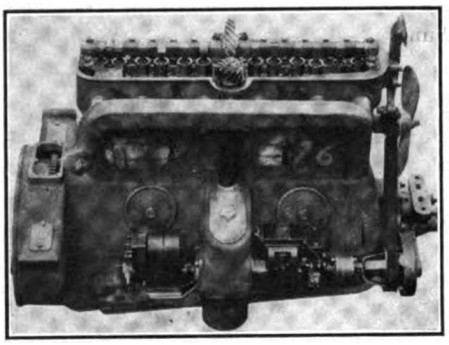


The Premier-Weidely is built in three models, 5-passenger, 7-passenger and roadster, all on the same chassis, and the price is $2,700 for either

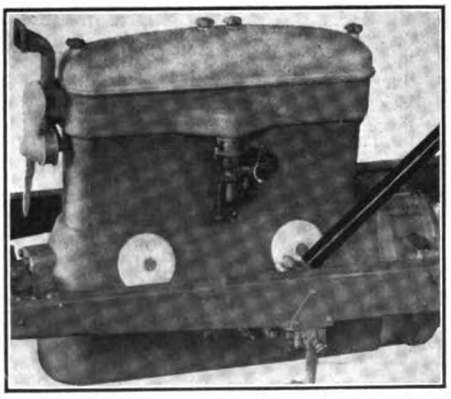
As a result of a year's use in the hands of many owners, a number of detail improvements have been made in the Weidely motored Premier car, manufactured by the Premier Motor Mfg. Co., Indianapolis, Ind.; there have been no radical changes, however, and the general character of the chassis as a whole remains unchanged. But one chassis is built with the Weidely motor, and on this will be mounted five- and seven-passenger touring bodies and a roadster, the price being $2,700 for either type.

Changes in the chassis are confined to the substitution of semi-elliptic for three-quarter elliptic springs in the rear and the straightening of the side members of the frame, except for a slight kick-up over the rear axle. The side frames converge toward the front, where they are 6 inches closer together than in the rear.

Apart from the motor, the chassis is quite conventional throughout. The motor is of the valve-in-the-head type, but differs widely from other motors that are so designated. The six cylinders are cast in a block and are integral with the crankcase. The head is a single-piece casting, and it carries the gas passages, the valves and the camshaft which operates the valves. The valves are in a row along the center of the head casting, their short stems vertical, and over them is the camshaft with which the cams are integral. In order to protect the valve stems from the lateral thrust that would result from direct action of the cams, the cams act upon pivoted levers, the ends of which are interposed between the cams and the valve stems, giving an almost straight downward thrust. The levers, where they take the cam thrust, are broad, giving a large area of wearing surface.



Drive for fan, water pump, lighting generator, valve shaft and magneto is through one shaft on the right



On the left side of the motor there is nothing but the carburetter, which is bolted direct to the head casting

A worm gear mounted in the middle of the camshaft meshes with a pinion at the top of a vertical shaft which transmits the drive. The camshaft runs in three large bearings, the gear being close to the center bearing. All the valve-operating mechanism, including the gears, runs in a tight chamber formed by putting an aluminum cover over the head casting, which permits copious lubrication and excludes dirt.

One result of this construction is that the exterior of the motor is remarkably clean and clear. On one side of the motor there is nothing except the carburetter, which is bolted up to an overhang of the cylinder head casting, while on the other side a gear-driven shaft transmits motion to the fan pulley, the water pump, the Remy generator and the Eisemann magneto, the vertical shaft being driven by a gear which comes between the generator and the magneto.

The bore is 3⅝ and the stroke 5½ inches; the S. A. E. rating is 31.6 horsepower. It is but natural, however, to find that the actual power developed should be markedly in excess of the formula rating, for the designer has been at great pains to cut down losses. The distinctive valve system greatly reduces the number of moving parts and at the same time reduces friction. The short-stemmed valves are very light, and the



Lincoln Beachy, the aviator, and Barney Oldfield, in a Premier-Weidely roadster. This model has wire wheels while the touring car is regularly fitted with wood wheels

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direct action is conducive to quiet running, what little sound there may be losing itself in the aluminum cover so that the motor is extremely quiet in operation. The valves are 1 15/16 inches outside diameter with a clear opening of 1 21/32 inches.

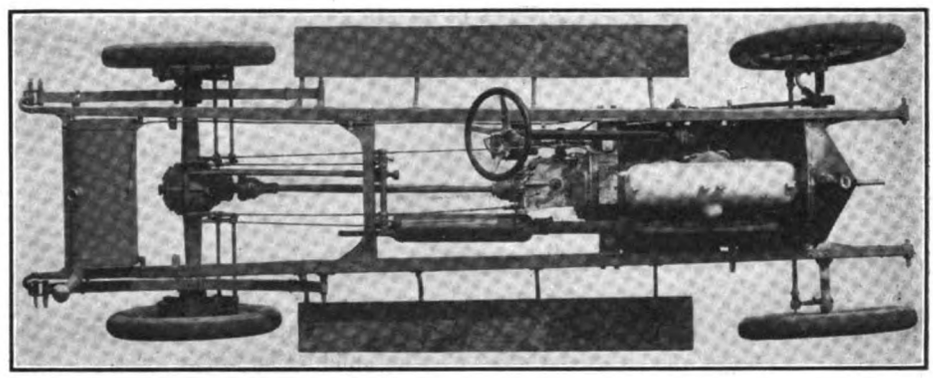
The lubricating oil, which is circulated by a pump driven from the lower end of the vertical shaft, is distributed by a rotating sleeve on top of the pump, flowing in equal quantities to the six splash troughs. A special system lubricates the valve mechanism. Oil is carried to the camshaft, which is hollow, through a passage at the center bearing; at the lowest part of each cam a hole is drilled to meet the hole in the shaft, so that a constant stream of oil flows from each cam. A well in which the central gear runs provides flood lubrication for the teeth. Of course there is a large surplus of oil, which drains down to one end of the head and returns to the crankcase through a passage in the casting.

The three-speed gearset and the disk clutch are housed in a casing that is bolted up to the crankcase, the whole forming a unit power plant. The unit idea is carried still further by bolting the radiator to the front of the motor, without the usual supports on the frame; the radiator is V-shaped and is of ample capacity to cool the motor under all running conditions. The construction permits the elimination of the usual type of water connections, the pipes being bolted rigidly in place and being short and direct.

The propeller shaft is fitted with two universals and is not enclosed. A torque rod runs from the rear axle housing to a cross frame at about middle of the length of the propeller shaft. The rear axle is of the full-floating type. Both brakes act on large drums on the rear wheels, and both are well provided with adjustments.



Forward doors are wide and open toward the front, showing the left steer and center control system



The chassis has side frames which converge toward the front and are straight except for a little kick-up at the rear. Motor, gearset and radiator form a unit and there are no flexible connections between the radiator and the cylinders

Gasolene is carried in a large tank hung at the rear of the chassis, feed to the carburetter being by the Stewart-Warner vacuum system.

SELLING FEATURES OF THE PREMIER-WEIDELY MODEL.

Price:	
Touring, 5- or 7-pass.	**$2,700**
Roadster	**2,700**
Make of motor	**Premier-Weidely**
Number of cylinders	**Six**
Shape	**Valve-in-head**
How cast	**Block**
Bore	**3⅝**
Stroke	**5½**
S. A. E. rating	**31.6**
Magneto	**Eisemann**
Carburetter	**Schebler**
Starting-lighting	**Remy**
Clutch	**Disk**
Gearset	**3-speed**
Wheelbase	**132**
Tires	**36 x 4½**
Wheels, touring models	**Wood**
Wheels, roadster	**Wire**
Steering	**Left**
Control	**Center**
Type rear axle	**Full floating**

Equipment: One-man top, ventilating windshield, tools in box under side apron, pump, etc.

Extra for wire wheels on touring models, $80.

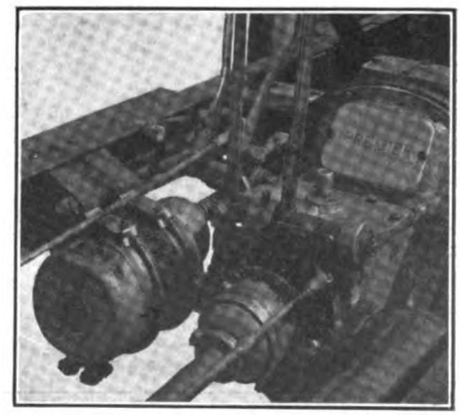
All the springs are semi-elliptics and all are long and flexible. Wood wheels are regularly fitted on the touring cars and wire wheels on the roadster; the tires are 36 x 4½ front and rear. The wheelbase is 132 inches and the tread the conventional 56 inches.

As in the previous model, left drive and center control are employed. Electric lighting and starting are provided for by the Remy system; the starting motor is located back of the engine, near the gearbox, and is bracketed to the left side frame, while the generator is on the engine, as has been stated. The storage battery is conveniently located and at the same time concealed by being placed under one of the side aprons that cover the space between the body of the car and the runningboard. The same method of concealment is adopted for the tool box. Hinged sections of the aprons give easy access to the storage cells and to the tools.

All cars are fitted with the items which comprise the usual equipment, such as one-man top with cover and side curtains, rain-vision ventilating windshield, lamps, pump, jack, tools, and so on. Enclosed bodies are not listed with the standard models, but are built on special order at special prices.

Safety First Vehicles from Kalamazoo.

For the purpose of producing both commercial and pleasure vehicles, the Safety-First Motor Car Co. has been formed in Kalamazoo, Mich., with a capitalization of $10,000. Frank Dentler, who is the holder of patents under which the vehicles will be manufactured, is the moving spirit behind the venture. F. A. Young is president, the other officers being W. P. Haines, vice-president, and George J. Haines, secretary and treasurer. These men and Dr. E. D Brooks and R. D. Hassinger are trustees.



The Remy starting motor is mounted beside the gearset, which is bolted to the rear of the Weidely motor

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Philadelphia Man Runs Garage on Own Plan

Has Low Rate in Winter—Abandoned Checking Cars—Private 'Phone to House—Bumper in Doorway.

To meet the objections of some of his customers to paying regular storage rates during the months when weather conditions prevent constant use of their cars, F. K. Mears, proprietor of the Regent Garage in Philadelphia, makes what he terms a "half price rate" during December, January, February and March.

His regular rates are from $10 to $25, according to size of car, and those charges include regular cleaning. During the half-rate period, however, he includes no cleaning but makes a charge of $1 whenever the owners wish to have their cars cleaned.

No Waste Floor Space.

Mears, who has been a garageman for 15 years, recently enlarged by purchasing an adjoining garage so that his place, fronting on two streets, is now 100 feet wide and on one side is 227 feet deep and on the other 167 feet, as the lots are irregular in shape. While the buildings were erected with no idea that they would eventually be used as a unit, the floor plans (Fig. 1) disclose that there is little or no waste space. At present he is taking care of 152 cars, but the full capacity will be largely in excess of that number when he carries out his plan to strengthen one of the buildings so that the second floor may be used to capacity for storage. It is used now only for the storage of a small number of light cars.

The building in which the shop is located is two stories high at the rear, which is new, while the front portion is but one story in height.

Mears keeps no check on the use of the cars stored with him, although he installed a time clock for that purpose. Some of his customers complained that it was unnecessary to bother them with the reports, and when this became known it caused general dissatisfaction on the part of the drivers for others. As there was no demand by the owners that the checking be done, Mears abandoned it, thus saving the expense of checkers. He is a believer, however, in keeping a check on the time cars are taken from and returned to the garage.

Spaces Bear License Numbers.

Mears not only follows the usual custom of numbering his spaces and assigns a specific one to each owner, but he also marks each space with the license number. This he found to be a convenience for the workmen, who can tell at once, by comparing the license numbers with the corresponding numbers on the spaces, whether or not the cars are in their proper position.

Mears has found it to be necessary to keep in constant touch with his place.

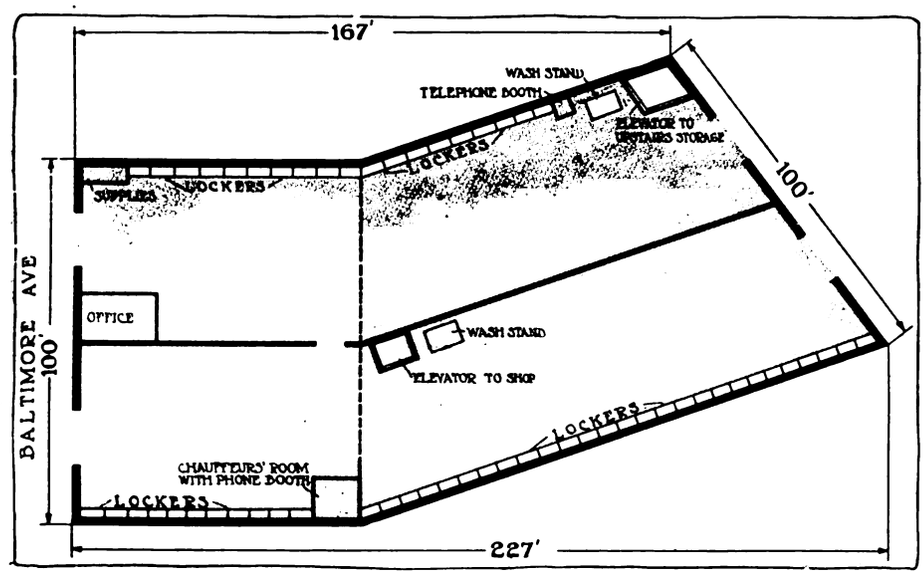


Fig. 1—The acquirement of additional property resulted in an irregularly shaped garage—There are entrances on two streets and the garage accommodates 152 cars

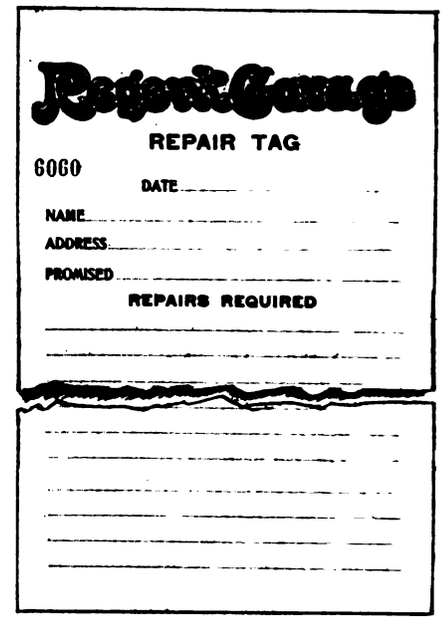


Fig. 2—This tag is made out when a car is received with order for repairing

For that reason he has installed a private telephone service to his residence and, regardless of the time of day or night, he is ready at all times to help in the adjustment of any difficulties which arise or to assist in repair work. Being a competent mechanic himself, his services are often a necessity in emergency cases, particularly at night when the shop is closed. He considers this a most important feature of his service to his customers and the growth of his business would seem to show that he is working along the right lines.

Operates Efficient Repair-Shop.

An important part of his business is the repair-shop, where he employs 7 competent men and has an extensive equipment. All of his power machines are operated on one line, the power for which is furnished by a 4-horsepower Otto engine. The compressor for cleaning motors, inflating tires, etc., is also run by that engine. The repair-shop is conducted on a charge basis for owners storing their cars with him, thus giving him a lien on them, while on outside work the charges are collected on delivery of the cars.

Cars received for repairs are taken down and an estimate made. If the work is ordered, a numbered repair tag (Fig. 2) is prepared and delivered to the foreman of the shop after a record is made by the bookkeeper. The mechanics purchase from the storekeeper such material and parts as they require. The purchases are made in the name of the car owner

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and the sales slips also bear the number of the job. The original of the slip goes to the shop and the duplicate to the bookkeeper for billing.

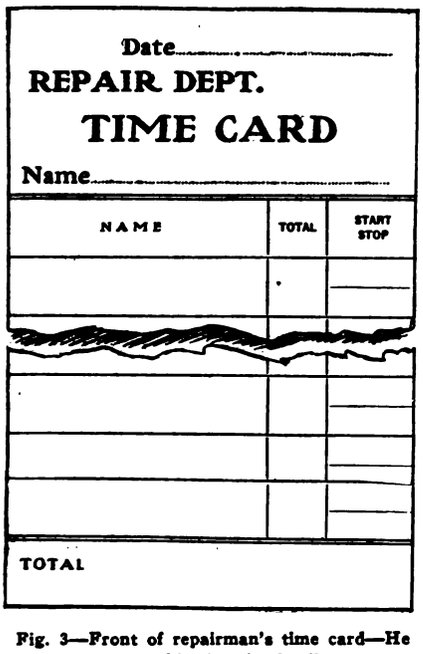
The workmen show on their time cards (Fig. 3) the time consumed on each job on which they may work in a day and those time cards are used as a basis for the repair job bills and the pay-roll.

When a job is completed the bookkeeper notes on the reverse of the repair tag (Fig. 4) the materials and parts used and the time consumed on the job, as shown by the sales slips received from the storekeeper and the time cards of the mechanics.

At the time Mears erected one of the buildings which he now occupies he was already a garageman of experience, having been in the business on the same block for several years previous. As a result of his experience, he determined to prevent such accidents as are due to the desire of some drivers to enter garages at high speed. He had learned that signs directing that cars be slowed down were ineffective and that was also true of verbal warnings.

Therefore, instead of making the entrance from the curb on a slight, even grade, he installed obstacles. One of these, the first to be encountered, is the curb itself. Instead of having it removed, he merely cut it away sufficiently to prevent tire damage.

Inside of the entrance to the building he arranged a rather abrupt rise of about 2 feet above the pavement grade. The result of this arrangement has been entirely satisfactory in preventing recklessness in bringing in cars, and he is planning a similar arrangement for his additional building.


Date.....

REPAIR DEPT.

TIME CARD

Name.....

NAME	TOTAL	START STOP
TOTAL		

Fig. 3—Front of repairman's time card—He enters his time in detail

CHARGE ON SLIDING SCALE POPULAR IN PHILADELPHIA

Garagemen Find That Charging Only for Service That Is Actually Rendered is Most Satisfactory Arrangement.

A striking feature of garage management in Philadelphia is the prevailing practice of having a sliding scale of storage charges so that a customer is asked to pay only for what he gets in the way of service.

The Southwestern Garage of A. Sharp, 53rd street and Baltimore avenue, makes a charge of $8 for dead storage and for cars in use which are not cleaned except on order. The charge for washing and polishing such cars is $1. As that service is optional the owner may keep his cleaning expense down to what is required by his actual needs.

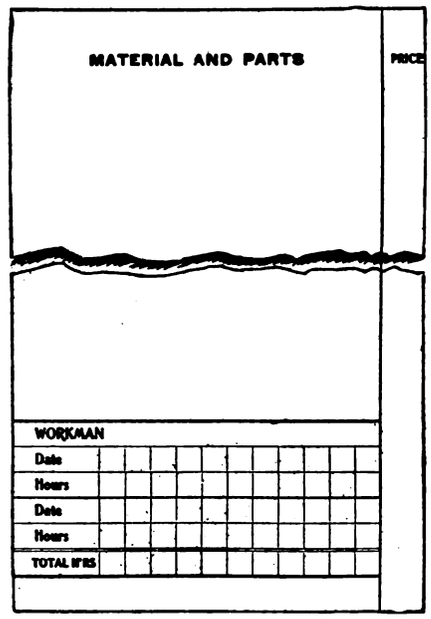


Fig. 4—Back of time card—Time is totaled and parts cost is added

The charges for live storage when washing and polishing is included are also graded to conform to the service given. Charges range from $10 to $20, according to the size of the cars and the frequency of cleaning. The $10 charge, for instance, is for a small car like a Ford and calls for cleaning two times a week. For $12 the same car is stored and cleaned daily. The $20 charge is for closed cars which are thoroughly cleaned daily.

The Southwestern Garage has entrances from two streets, and as no check is kept on the going and coming of the cars, both entrances are used at all times and cars are placed at any convenient place, having no regular space assigned to them.

The building is of one story and is well lighted, having windows on all sides and also a number of skylights.

The floor arrangement is such that cars are stored along the sidewalls entirely. Cars on dead storage, or those which are used infrequently, are placed along the wall in the rear of the repair-shop, and that is the only class of storage having a definite location.

Here's a Joyful Prevaricator.

New York city's Automobile Row has just "tied the can" on the king of demonstrating joy riders. His name was Peter Something-or-Other and he represented himself as a wealthy South American. He seemed to live in one of the most luxurious apartments on Riverside drive and had demonstrations without number until his career was ended.

Just exactly how many salesmen donated the use of a car to Peter under the guise of "demonstration" probably never will be known, but one salesman who called at the apartment house one evening was informed by the elevator man that "he was the thirty-seventh car so far." Peter had Sunday rides, evening rides and rides at all times, and signed several contracts—but without deposits.

One day two salesmen compared notes and discovered what Peter was doing. A few days later, when he was due at a certain salesroom "to look at a car," a policeman was tipped off and several salesmen victims were summoned. Just as Peter was signing another contract the policeman put his hand on Peter's shoulder. Peter fainted.

An ambulance was called and when the surgeon found what ailed Peter he was none too gentle in slopping restoratives in Peter's face. Meantime a few of the salesmen aided his recovery by slapping his face—gently, of course. Peter recovered rapidly and very humbly begged and pleaded that he be let go, that it would never happen again. The salesmen considered themselves partially squared with him and let him go.

Scranton Company Has Outing.

The Economy Auto Co., Scranton, Pa., held an outing for its employes Saturday, August 15, on the Bessemer farm, at Wallsville. Athletic sports for men and women were held and teams, designated Locomobile and Oakland, played ball. Locomobile won, 8 to 6.

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What Do You Think of Bargain

Here Are Two Sides of This All Important Question Whic Condemn the Practice and Others as Strongl

THESE MEN SAY THE PRINCIPLE IS WRONG

ALTON A. BRIGGS SAYS THE PLAN CANNOT BE OF BENEFIT.

"Bargain sales in connection with motor car supply houses or dealers cannot benefit them," says Alton A. Briggs, of the Acme Sales Co., Detroit, Mich.

"The motor car supply business is entirely different from all others and methods which are a success in other lines of business have often turned out to be a failure in our business."

Again—Once Cut, Always Down.

"Once you advertise motor car supplies at a cut price, it is almost impossible to sell the same article at a higher price thereafter. We have tried it and we know what it means to try the bargain-counter idea in connection with the motor car accessories and supplies.

Value Always The Same.

"The automobile owners, garagemen and repair-men are a class by themselves. They can not and will not believe that if we sell the spark plug this week for 50 cents that this same spark plug should be offered them for 75 or for only 60 cents the week or the month thereafter.

Higher Price Looks Like Robbery.

"They only think about one thing when the higher price is asked, and that is that we are trying to beat them, to rob them. You cannot argue with the motor car owner on such matters. He knows only one thing; the price he has once paid for a certain article, and unless the price is the same, or lower, when he comes to get the similar article, he thinks that you are trying to 'put one over him.'

Only One Excuse For Sales.

"There is only one excuse for having bargain sales and that is in connection with disposing of stock which you cannot otherwise sell. In other words, I think that when a supply dealer has a line of goods which does not sell and which he wants to get rid of, it is a good idea to advertise a bargain sale of those goods. However, it will not do for him to again sell or advertise the same goods some time thereafter and then ask a higher price for them.

Lower Price Causes Suspicion.

"Once you have cut a price you cannot do otherwise than to stick to that price. The chances are that if you try to get your old, original price you will lose customers. Then, too, there are many owners who do not favor the idea of cut prices, as they think the goods are not what they ought to be, that they might be damaged or have some defect. Many owners, therefore, prefer to pay the full price, thinking they are thus better taken care of.

Feature Sale Without Cut Price.

"It is quite possible through judicious advertising to make a feature sale each week of some special article, without cutting the price. Such sales announcements will probably attract a great many prospective buyers and many sales may result for other articles which they see in the salesrooms."

AS BUSINESS GETTER THEY ARE FAILURES

Detroit Supplyman Says They Likely Will Breed Dissatisfaction.

The Automobile Supply Co., Detroit, is another that does not favor bargain sales by supply houses.

"Such sales cannot result in increasing business, but instead will result in dissatisfying customers because when once they have purchased something at a certain price it will be almost impossible to make them pay a higher price for the same goods," says this company.

Not Bargain Hunters.

"As a rule the motor car owners are not bargain hunters and are willing to pay the full price. By maintaining prices the supply dealers will increase their business, while by having cut-price sales they are more liable to lose their good customers. Furthermore, bargain sales in the motor car supply line do not net a profit but often result in a loss."

J. K. Marston has raised a small sized storm which likely will be felt all over the United States. Already criticism, both destructive and constructive, is commencing to come in to MOTOR WORLD office. The mere fact that letters have been received from Albany, N. Y., Atlanta, Ga., Boston, Mass., Detroit, Mich., and a number of other cities, is proof conclusive of the widespread interest that his letter, published on this page last week, has created.

WILL RUIN SERVICE THIS MAN'S OPINION

Wiley West Says Bargain Sales Will Lessen Business—Keep Trade Away.

Wiley West, manager of the Atlanta, Ga., branch of the Firestone Tire & Rubber Co., said:

Cut Price Reduces Service.

"I do not favor the cut price sales. When a dealer cuts the price of any article he cannot give the service that his customers are entitled to. The man that cuts a price must make up elsewhere.

Also They Lessen Business.

"Cut prices lessen business in my opinion. Fake sales, cut price sales for a week at a time on some special article have been run into the ground.

Maintain Same Price.

"In my opinion, by sticking to dignified business methods, maintaining the same prices all the time on a standard article, backed by the manufacturers' guarantee, will promote more business than all the cut price sales in the world. The dealer is then giving the customer value received.

Cut Prices Promote Bankruptcy.

"Cut price sales educate the trade to expect it It promotes bankruptcy. The dealers must make up elsewhere, as the expenses have to be carried on regardless.

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lethods in the Supply Store?

ally Concerns Every Supply Dealer—Some Dealers Strongly vocate It—What Do You Think?

Briefly, Marston advocates that ach week the supply dealer cut the rice of some standard article—ake it a real bargain—upon the ssumption that this method will raw trade to the store and make ales of other articles. But will it ork out this way? That is what very supply dealer should know. Vhat has been your experience? lave you ever tried this bargain ale method? Was it successful?)r why did it fail?

DEMORALIZING SAYS ONE ALBANY DEALER

If You Cannot Make a Profit Without Cutting, Says Foskett, Stop Selling.

Albany supplymen are not in accord with "J. K. Marston," who believes in running supply houses somewhat on the plan of a department store and cutting prices.

W. E. Foskett, manager of the automobile accessory department of the Albany Hardware & Iron Co., probably the largest dealers in Albany, has this to say:

"I think it would be demoralizing to the trade generally. It would be detrimental to good business and once the price is cut even for a limited period a man will always want the article at the low price.

Will Go Out of Business.

"If a dealer cannot sell an article and make a fair margin of profit he might just as well stop selling that article, for sooner or later he will go out of business.

"I can easily see where accessory stores in very large cities might cut a price and cater to a mail-order business, and of course there are some that do it, but you will find that the dealer who wants to give his patrons just what they pay for and who also wants to make a profit on the business that will pay him for his effort will have no use whatever for the cut-price bargain-counter idea as suggested."

☞ THESE MEN SAY THE PRINCIPLE IS RIGHT

F. W. WILKENNING ENTHUSIASTIC FOR BARGAIN SALES.

Frederick W. Wilkenning, manager of the Boston branch of the Motor Parts Co., is an enthusiast in the matter of offering bargains, although he believes his particular concern, catering chiefly to dealers, is not in a position to offer bargains as advocated in the Marston letter. His letter is particularly interesting for the reason that it comes from a man thoroughly conversant with trade methods. He says:

Believes In It Thoroughly.

"I believe in the proposition thoroughly, and although I am not in a position to enter on such a campaign as would be necessary on account of the peculiar nature of the distributing business I am in—business chiefly with dealers—I have tried it in other branches of the business with great success.

Would Offer Specialty List.

"If I were in the accessory business, catering to the consumer, you would find me offering not merely one specialty for one week, but a short list of weekly specialties. That is what I found to work.

Success Depends On Salesman.

"The answer that so many will probably make to the inquiry—Does a bargain offering pay?—that those answering the advertisements will merely buy the bargain object and leave no more money in the store, all depends on the people that offer the bargain. A good salesman will, if, for instance, some magneto accessory is offered, sell the customer a carburetter.

Losses May Make Business.

"I would offer a certain make of spark plug as a specialty for a low price. I consider that if I have placed these high-grade spark plugs on a man's car, even at a loss, I have made business for myself, for the man will return to me for more, and when he finds he has to pay the standard price he will pay it, for he will have discovered by that time that it pays to have high-grade spark plugs of that particular make no matter what the additional price.

Bargains Mean Publicity.

"Another point to be considered is this: The general publicity advertising obtained by the concern offering the bargain is well worth the cost of the publication advertising, plus whatever additional loss or profit there may be on the object offered, even if no additional goods have been sold from stock on account of the bargain specialty."

SMALL PROFITS FROM QUICK SALES FAVORED

N. Woolman, Atlanta, Ga., Says He Has Always Succeeded With This Plan.

N. Woolman, manager of the Auto Supply Co., Atlanta, Ga., said:

"I favor cut price sales. A small profit and quick sales has always been my motto and I have succeeded at it."

ANOTHER DEALER SAYS "BAD PRACTICE"

Chas. Elyea Says Cut Price Sales "Have Failed to Net Desired Results."

Charles Elyea, of Elyea Austell Co., the largest supply dealers in Atlanta, Ga., said:

Cut the Price? Never!

"I am against the cut price sale. We sell a standard article in every branch of our supply business. It is backed by the guarantee of the makers. It is standard, always good, and cut price sales would reduce its efficiency in selling.

Better Results From No Cuts.

"I believe that by maintaining a uniform price and keeping the articles to be sold of the highest class of goods, supply dealers can get better results.

"I reach this conclusion from experience. Cut price sales years ago failed to net the desired results."

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WIDE-AWAKE MERCHANDISING

CONCENTRATION AND SERVICE BUILT UP THIS TIRE BUSINESS

Instant Attention to the Wants of Customers Regardless of Where They Are Turned Failure Into Success—Has 20 "Coons" In Yellow Ford Cars.

Little things sway the sale of a tire. Sometimes it is price. Sometimes it is reputation; again it is the wearing qualities of the tire, but above everything else the man who buys tires appreciates service. And, as between two tires, the dealer that gives him the best all-round service is likely to get the business, provided his tires are of known quality.

The 638 Tire and Vulcanizing Co., Memphis, Tenn., started a couple of years ago on a side street, pushing a line of cars and handling tires as a side line. The car manufacturer went out of business, the proprietors closed out the car end of their trade and devoted themselves exclusively to tires.

Today the "638," as everyone in Memphis calls it, is one of the foremost tire dealers and repairers in the South. It takes it name from its telephone number, which of itself was a clever move.

The proprietors had the deep-seated conviction that there was plenty of room for an exclusive tire business if it delivered unusual service. So they mapped out a plan that would enable them to offer tire buyers a more complete service than could be obtained elsewhere.

The first move in this direction was the installation of an up-to-date vulcanizing plant and the purchase of four service cars. Needless to say, they always carried a good stock of tires on hand.

The next move was to secure a location right in the heart of the automobile colony on Monroe avenue, where they are kept very busy delivering their particular brand of service.



Twenty colored men in Ford cars are constantly at the beck and call of customers. "Telephone 638 for Instant Service" is the slogan

Walter Hunter is president of the 638 Tire and Vulcanizing Co., George P. Pope is secretary, and Dick Waters is sales manager. The two latter are in active charge of operations and have made themselves exceedingly popular with all the motorists of Memphis by their conception of the service idea as applied to the tire business.

The "638" takes care of its customers wherever they are and whenever they need it—day or night. Frequently calls from points 10 to 20 miles out are answered and no extra charge is made. Spare tires of customers, and casings, tubes and rims, are kept in racks alphabetically arranged so they can be instantly and easily reached, and when an S. O. S. call comes in a "nigger" starts out at once in one of the eight service cars with whatever is needed. It may be the owner's repaired tubes or casings that are required, it may be new goods, but whatever it may be is quickly forthcoming.

"Boy" Does All the Work.

This "boy" makes the tire change, pumps up the tire from a tank of compressed air with which each car is equipped, and brings back the casing or tube. Gasolene is also carried to customers in trouble and delivered at regular prices.

One striking development of the service idea is that list prices are maintained without difficulty and repair work naturally flows in at good prices. Firestone tires are handled exclusively, it being the theory of the "638" that concentration on one line saves conversation and helps sales. A general line of accessories is carried in stock, such as batteries, plugs, grease cups, small tools, oils, polishes, etc. At the curb they have a gasolene station, six air lines and a water hose.

Their advertising has been very generous, theatrical and baseball programs, picture slides, road signs, newspapers, mailing lists, etc., all being used liberally. Their mailing list is followed up at

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regular intervals, and everywhere "service" is emphasized as the keynote of their business.

One clever idea is their service cars. These are all Fords and all have yellow bodies with a big "638" thereon. "Instant Service" is the slogan.

Every Car Is "Tagged."

Every car that goes into Memphis Firestone equipped has a little German silver plate bearing the words "This car equipped with Firestone Tires. In case of trouble call 638 either phone." The plates cost the "638" people about 10 cents each, and they have proven a remarkably wise and profitable investment.

The plate is more than an advertisement. It is an invitation to use "638" service when in trouble. It takes that burden off the car dealer's shoulders and places it squarely on the "638," and that is where it is wanted. Of course it took some diplomacy to get these plates on cars. But after all it did not prove so difficult when the purpose was clearly understood, and car dealers now cooperate to the limit.

Twenty colored men are employed by the "638" and from eight to ten white men. A telephone clerk who understands the ideas and principles behind the business is on duty day and night.

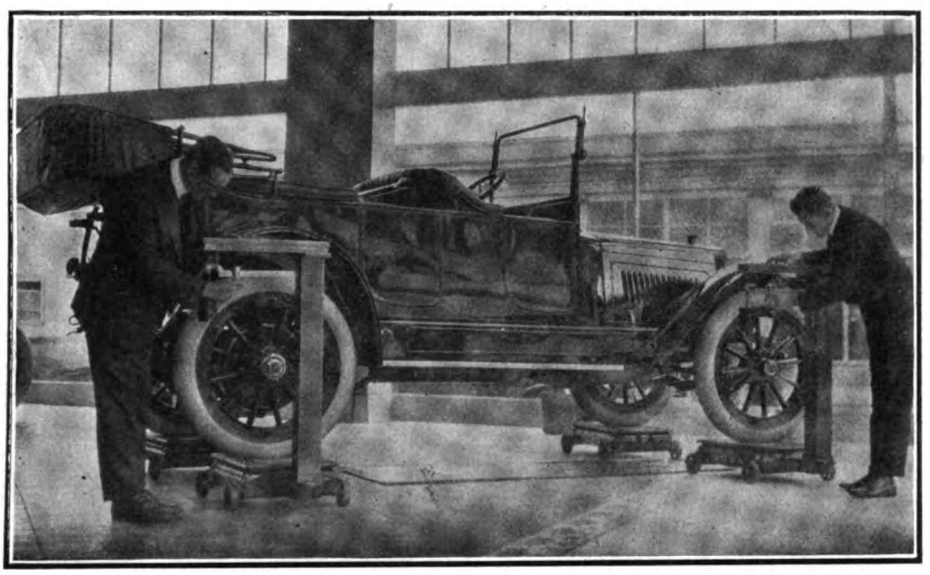
WEIGHT ARGUMENTS CLEVERLY AVOIDED

"Run It on the Scales" Is Done Before the Request Is Made.

Here is an exceedingy novel and business-like method of inviting attention to light weight. Questions as to weight are being asked more frequently today than ever before and the expression "run it on the scales" is not uncommon. But very few people have a chance to "run it on the scales."

The Bekins-Speers Motor Co., San Francisco, Cal., hit upon the practical idea clearly indicated in the illustration. It shows a new model Lozier mounted on four Howe scales. It stands squarely in the center of the window and in front is a card bearing the legend, "Guess My Weight." Needless to say it drew a great deal of attention and proved a great talking point when prospects were brought to the salesroom.

The question arises, does this method of weighing give the correct figures? The answer is that it most assuredly does. The sum of all the weights shown on the four scales is the total weight.



Weight arguments may take a lot of explaining—but there is no chance for them here

THIS IS THE TIME TO PREPARE FOR OPENING OF THE CLOSED CAR SEASON

Limousines, Landaulets, Cabriolets, Sedans and Coupes All Can Be Sold If You Go After the Business Now.

The closed car season will soon be upon us. Sedans, limousines, coupes, cabriolets, convertible bodies, etc., are in the public eye. It is the time for action. Closed car business is stirring now. And the man who will glean profits from it must fairly exude energy and hustle that he may get names on the dotted line now and orders for early delivery into the factory at once.

Closed Cars Not Only for Wealthy.

In one city where closed cars had been regarded as largely a luxury for the reckless rich, a certain dealer demonstrated that sales could be made to families of medium wealth. It is a matter of record that the volume of his sales outstripped that of New York and Chicago dealers handling the same line.

It was because this dealer realized that the time had come when men who did not employ chauffeurs had arrived at an appreciation of a closed car for winter—and he resolutely spread this idea among his salesmen and then among his possible customers till they vindicated his theory by placing orders for more closed bodies than had ever been sold before by a dealer in that city.

It was clearly demonstrated that the closed car business is in its infancy. And 1915 will see many dealers everywhere wide awake to this fact and putting forth new energy and new thought to build and develop the closed car trade.

The prospect who will not buy a new touring car late in the fall can often be induced to buy a sedan, limousine, cabriolet or coupe. If you can furnish these cars why not concentrate on the sale of them for a short period and learn what can be done?

DON'T LET THE WAR INTERRUPT BUSINESS

There Are Only 8 or 10 Working Hours a Day Even in War Time—Get Busy.

War talk is in the air—it is rampant everywhere. But if the salesmen spend more time discussing the war and reading the extras than they spend calling on prospects and pushing for business how can you expect that the reports at the end of the month will equal those of a year ago?

There are only eight or ten working hours to a day even in war-time. And they must be put in on solid work if the ledger is to read right. Extra hustle—extra energy—higher speed, "hitting on all six" is the demand of the hour.

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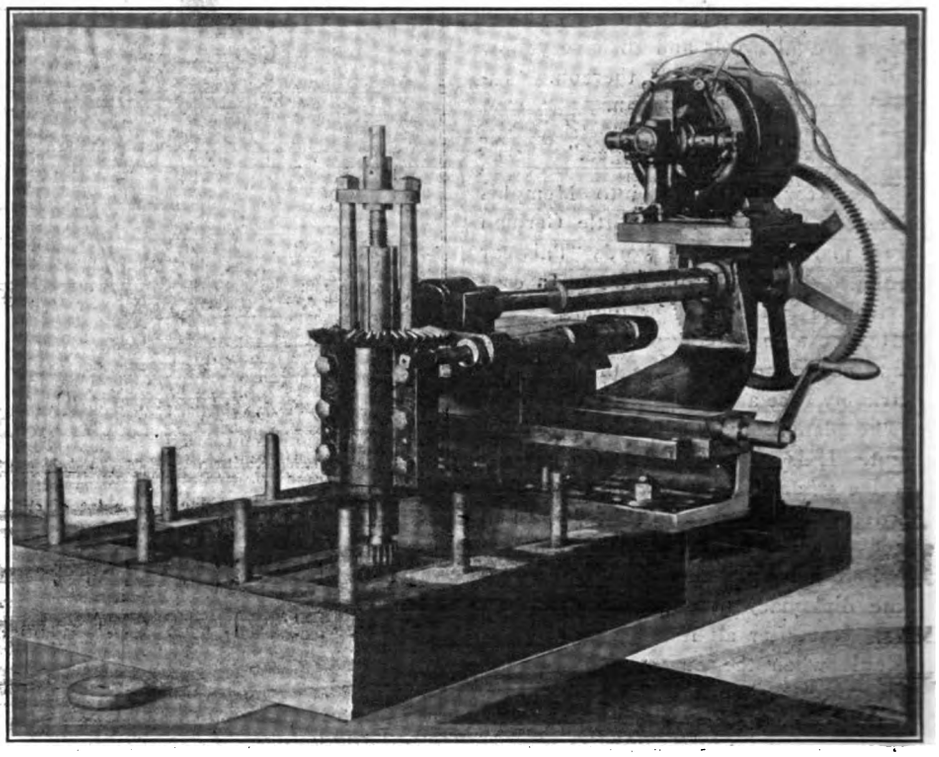
Portable Milling Machine Has Electric Drive

Compact Machine Tool That Can Be Taken to Its Work.

Useful for Surfacing, Grooving and Other Milling.

Belt or Hand Power May Be Used Instead of Motor.

When the shop has a job that can best be done by milling, but which cannot be taken to the milling machine because of weight or bulk or for any other reason, a good opportunity is presented for making use of a portable milling machine such as that manufactured by the Pedrick Tool & Machine Co., 3640 North Lawrence street, Philadelphia, Pa., and shown in the accompanying illustration.



Portable milling machine that carries its own power with it and can be taken to the job and bolted in position for surfacing, slotting, grooving and other milling machine work. It will do drilling and keyway cutting also

The machine has no means of holding work as it is held in ordinary milling machines. Instead, it is bolted to the job. The illustration shows a machine working on the valve seat of a slide-valve steam engine, and in this case it can not only face up the surface, but it can true the edges of the ports.

The bottom of the casting which forms the bed of the milling machine is a flat plate with a number of slots cut in it so that studs or bolts may be inserted for holding down purposes. Above the bottom plate, and parallel with it, is the slide which carries the moving parts, including, of course, the cutter head. The longitudinal travel on this slide is 12 inches, and there is a cross slide, at right angles, with a travel of 6 inches, while the spindle has a vertical movement of 6 inches.

Three Ways of Applying Power if Motor Is Not Used.

The vertical spindle is driven through a pair of bevel gears, a shaft which telescopes to permit the cross travel, and a spur gear and pinion, by a small Westinghouse electric motor mounted above the arm that carries the back bearing of the main shaft. The motor is of ¼ horsepower and, as is usual in such cases, may be for either direct of alternating current.

It is not absolutely necessary to use the motor for the drive. It is entirely practicable to use a belt driving to a pulley on the end of the shaft, a flexible shaft or even a hand crank, for light work. The omission of the motor reduces the weight of the machine by some 45 pounds and of course brings down the price.

Spindle and Cutter Removable Together if Cutter is Small.

In the construction of the miller provision has been made for really hard work, and the machine will stand up under the heaviest work it is able to perform. The spindle bearing is long and well fitted and the spindle is 1½ inches in diameter. Spindle and quill revolve together, and there are no shoulders to wear and permit the cutter to jump from its work. If the cutter is no larger than the diameter of the spindle, spindle and cutter may be lifted out together when it is necessary to sharpen the cutter teeth or put in another cutter. If the cutter is working in a deep recess or the like this is important, because otherwise it might be necessary to move the whole machine and then reset it. The removal of the spindle involves only the loosening of two nuts. Commercial cutters can be used, as the spindle is provided with a No. 3 Morse taper.

All sliding parts are fitted by scraping, and the whole machine is rigid and smooth-working. The telescoping drive shaft is carefully made and works smoothly throughout its whole range. While the weight is not excessive, it is sufficient to permit substantial construction; the weight with the electric motor is 210 pounds, and without the motor 165 pounds.

Wide Range of Work Can Be Done from Cutting to Drilling.

The range of usefulness of such a machine is considerable. It will mill valve seats and ports, do surfacing on any casting or forging to which is can be properly attached, keyway cutting, pad and frame facing, and even drilling. For keyseating on large shafts the machine can be mounted directly on the shaft by means of a set of V-blocks, which are furnished as an extra when so ordered for the purpose. The machine can be set with the shaft vertical instead of horizontal if more convenient for the work to be done.

One of the advantages of the portable machine is that when it is not in use it does not occupy valuable floor space: it can be stored in any place where it will not be in the way. It does not involve any extra shafting installation or other permanent apparatus, and it is only necessary to connect it by means of a flexible cable and plug.

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Let the Seasons Help in Your Advertising

Bring Out the Mental Picture the Prospect Has of Touring Joy and Make Him Help Sell Himself.

By Ray W. Sherman

The telephone rang. But Reilly merely touched another match to his pipe, shuffled his feet in his Chinese slippers and pored more deeply over the library table and the litter of papers thereon. For the time being Mrs. Reilly was office boy and telephone girl.

"Yes?—Oh, yes; how do you do?—Certainly! Come up—Oh, he looks busy, but I guess it's mostly imagination." She laughed as she hung up the receiver. Although Reilly was too busy to answer the telephone he wasn't too busy to listen to the home end of the conversation.

"Land! I never thought anyone would come here tonight! Now I'll have to get some kind of clothes on!"

She scampered toward the staircase. This was too much.

"Well," Reilly semi-demanded, "who's coming? What's the commotion?"

"Your friend, Jim."

"Who, the Sales Manager?"

"Certainly!" And she whisked upstairs, as every woman does, to put on something different on the theory that what she has on is very decidedly negligee and would never, never do. No, never.

"Well," mused Reilly, as he continued to pore over his papers and litter, the light meanwhile finding its beadlike reflection in between the sparse hirsute growth. "I wonder where he's been and where he's going now. Seems as if he's always on the way from somewhere to somewhere. He's never still. H'um'm."

With this last vocal effort Reilly began to gather up the reams of paper and to pile the sheets neatly in the table drawer. It was not unusual for the Sales Manager to call on the Reillys, for a home is about 700 per cent better than any hotel and the Reilly home was a familiar place to the Sales Manager. Wherefore, when he blew into Callawassa late in the day, with the intention of making a stop until the morrow, he generally managed to sleep in Reilly's spare bed. It was standing orders with him that he must use the bed whenever he had occasion; and many a famous pinochle game had been pulled off before that bed was occupied.

A taxicab buzzed taxicabily in the street; it went on; the door bell rang, and Reilly and Mrs. Reilly—now more satisfied with her attire—got there together. They divided the hat and traveling bag between them.

"Well," opened the Sales Manager, sinking into a big chair which wiggled and wobbled in any direction and was very easy-riding. "Well, what have you been doing? Your wife said you were busy."

Reilly smiled. "Nothing much; just scheming a little."

"What now? Thought you didn't believe in working nights?"



"But if you picture this pleasure you are helping him sell himself, not making him buy"

Philosophy of Nocturnal Thought.

"I don't, Jim, but there are some things that just have to be done in the quiet of the evening under lamplight. I seem to be able to think better at night sometimes."

"Funny thing about night-thinking, isn't it? I often do it myself. The night seems to fall down over the world and shut out everything but the thing you are thinking of. You seem to be able to concentrate. Night sure is a great time for thinking."

"And I can think better in bed," laughed Reilly. "The only trouble is I can't remember all I think of and I hate to be getting up all night to make notes."

They all laughed at the picture.

"What were you doing?" casually inquired the Sales Manager, reaching for a spare pipe and the tobacco can.

"Oh, just figuring on a little scheme, a fall business booster."

"Always, all the time business," lamented Mrs. Reilly.

"He ought to be ashamed," rejoined the Sales Manager; "but what's the scheme now?"

Reilly Springs a Novel Word.

"Seasonal advertising," replied Reilly.

"Whatonal advertising?"

"Seasonal, s-e-a-s-o-n-a-l, seasonal. You know," and Reilly helped himself to a gesture; "spring, summer, fall and winter—that sort of stuff."

"Newspaper copy?"

"Tonight I was figuring on a booklet," explained Reilly, "but newspaper advertising is a part of it, too. If that advertising manager of yours did this I

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wouldn't have to burn midnight oil in order to do it myself. See?"

"Maybe I can persuade him. What's the idea?"

"Well, you see"—Reilly hitched around and put his feet in a chair—"I have always been a firm believer in taking advantage of every existing means of advertising; it's all right to plug hard on your own line of publicity, but there are a whole lot of things that you can make work for you, things that are lying right at your door and need only to be set up and made to work."

"Such as——"

"Oh, the weather, for one."

"Yes?" It was said in an inquiring tone.

Seasonal Appeal to Help Sales.

"Exactly. This is my idea. In each season of the year there is a particular line of appeal that hits home to the man who is in need of a car. The appeal is based upon the weather, or the season; you don't have to create the autumn; that's here. All you have to do is take advantage of it.

"Being the possessor of a car, you know that the autumn is one of the greatest touring times of the year. There is unbounded pleasure to be had on the country roads when the leaves are turning brown and gold and the old earth is getting ready for its long sleep. The roads are smooth and the air is crisp; it's fine. You know that."

"Yes."

"Well, I believe in making that appeal to the man at whom my advertising is aimed. It is all right to say that he has that idea in mind if he is giving any thought to the purchase of a car and that your regular line of advertising will have just as much of an effect. But it may not. A dealer wants to do everything he can to influence the sale. He wants to get every force he can to work on the prospective buyer, and, such being the case, he should not neglect the seasonal appeal.

Reilly Roots for Shore Dinners.

"It can be used in more forms than one. I was working on a booklet tonight, but it can be incorporated in other forms. It can be used in newspaper space, but that, to me, is not the ideal way. I want to use it in my circularizing. The booklet I am getting up is going to be one which pictures the joys of fall touring. In it I will have some pretty neat pictures of country scenes about Callawassa, showing views out among the hills and along the smooth stretches of road. There are hundreds of views within a few miles of this town that the average man never sees in their autumnal beauty. They are marvelous; they are worth all the time it takes to get to them.

"For pure pleasure you can't beat a ramble in a car in the fall. Put a few ears of corn, a hatful of potatoes and a few hot dogs into the back of the car and run down to Blue Lake for a shore dinner. Some people do do it—and more ought to. I'm going into the shore dinner boosting business. I think it's a worthy young industry."

"I'm in favor of it," laughed the Sales Manager.

"It does sound good," added Mrs. Reilly.

"Supposing I get a thousand or two of these booklets printed. If they sell one car haven't I got my money back—and then some? And while I may not be able to trace a single sale to the booklet it is sure to help make some."

"But you'll have to make a new one every fall," criticized the Sales Manager.

"Ah hah! But I won't!" Reilly seemed to have been expecting this objection. "I won't have to make a new one every fall—not unless there comes a new style in autumns. If this booklet pictures the joys of autumn touring, won't it be good as long as autumn stays in business?"

"But——"

Booklet Not to Be a Catalog.

"Don't say it!" interrupted Reilly. "I know just what you're going to say—and you're wrong. There don't have to be any pictures of cars in this; not close up pictures, anyway. I can work in country scenes with the car so far away or in such a position that you can almost make our whole line over and still make it impossible for the prospect to tell the difference. As for car pictures, I intend that he shall get a catalog or folder of some description that will tell him all he wants to know about our present line of cars, whether it be this fall or next fall. This booklet is merely an interest arouser, an appeal to the man's love of touring in the fall. With it, or not far from it, is going a catalog, or a salesman. I don't intend to leave everything to this booklet; this is just a help."

"How about closed cars?" asked the Sales Manager.

"That's another thing. I was just getting to it. We have always tried to push closed cars in the winter, but we ought to be able to work more systematically if we had some corking good literature to help. A closed car catalog is all right. That's one thing. But a closed car catalog doesn't try to get around behind a man and whisper in his ear that he is foolish to freeze his ears off all winter when he could just as well be cosy and comfortable in a coupe or a sedan. And that's what such a booklet could do."

"Yes, that's true," thoughtfully assented the Sales Manager.

Helping Prospects Sell Themselves.

"If you play up the features which make the car a good car you are building a mind picture of your own and making the prospect come to look at it. But if you picture the pleasure he will get from, say, autumn touring, you are putting the high lights into a picture he already has in his mind and always before his mental vision. You are helping him sell himself, not making him buy."

"But how could we make such a booklet?" questioned the Sales Manager. "It wouldn't fit any dealer but you."

"Why yes it would. I can go out this fall and take a bookful of pictures that will be so general in character that they will fit into almost any territory you've got. If you get the tang of autumn into them they would work anywhere. And it would be cheaper for you to make it than for me—although mine would be localized and would best suit my business. But you people could print thousands where I print hundreds, and every dealer could have them. As it is, the cost to me is high compared to what it would cost you, and I only have the use of the booklet. The other way it wouldn't cost the dealers anything."

"Fine scheme—for the dealers," smiled the Sales Manager.

"Leave it to my husband to figure out fine schemes," remarked Mrs. Reilly. "Meantime, I think I'll retire and leave you two men to scrap it out. It's cold, too. This fall air gets to me."

"Let's light the grate," said Reilly.

Business Banished by Firelight.

They drew chairs before the burning gas log, and Mrs. Reilly set an ash tray between them. As she said "Good night" she switched off the electric light, and the last view she got as she ascended the stairs was that of two semi-recumbent forms, silent in the light of the gas log. The flickering gleam had banished all thoughts of seasonal advertising and business. King Reverie had touched with his wand and King Everyday had vanished into the fire glow.

They sat thus for twenty minutes, and then the Sales Manager took off his shoes and spoiled it all.

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Dealer's Legal Status

Garage Is Not a Nuisance Unless It Causes Injury, Inconvenience or Discomfort or Is Offensive - But Odor or Noise May Be Nuisance.

By Geo. F. Kaiser

When a dealer hears that some disgruntled neighbor down the street has declared that his garage is a nuisance and is attempting to get the other residents in the vicinity to join him in an effort to procure an injunction, he need not be unduly alarmed.

Calling things a nuisance is a favorite pastime with some people. The great majority of these people also like to boast what they will accomplish by resorting to law. When it finally comes to the point, however, where there are attorney's fees to be paid and court costs to be shouldered, these malcontents oftentimes decide that the garage, machine-shop, or whatever business it may be, is not nearly so undesirable as they thought at first, and consequently decide to put up with it.

Garages Not the Only Places That Have Been Styled Nuisances

Before motor cars were in such popular favor the favorite point of attack of these children of discontent was the livery stable, and our law books are full of cases brought by people who alleged that they were made sick in mind and body by odors, noises, rats and whatnot emanating from stables in their immediate vicinity.

Garages and livery stables are not the only businesses which have been attacked in this way, but bakeries, ball parks, slaughter houses, stock yards, billiard rooms, beer gardens, blacksmith shops, boarding houses, bowling alleys, factories and even cemeteries are but a few which have been complained of similarly. The dealer at least then has the satisfaction of knowing that his is not the only kind of business which may meet with disapproval.

In order for those who complain against the annoyance to procure an injunction, or an order to have the nuisance abated, they must show that the business complained of is something that causes injury, inconvenience, discomfort or nuisance to them in the enjoyment of their legitimate and reasonable right of person or property, or that it is offensive to their enjoyment of life, health or comfort. In other words, they must show that they are unduly damaged by it. That is, that their property is lessened in value or their family made ill, etc.

ANNOUNCEMENT

It is not always wise to resort to the law. In many cases petty difficulties can be settled "out of court"—and every one all around then feels better.

But when shall we take these matters before the courts? That is one of the questions that is bothering more than one person.

Here, we have at your disposal a qualified, experienced lawyer who will answer any question pertaining to the motor car industry which you may care to put to him.

This is an opportunity for you to obtain expert legal advice without cost.

MOTOR WORLD invites you to submit your legal problems to its legal department. We are conducting this service for the benefit of dealers, garagemen and repair-shop operators. There are no strings to it.

ASK US

Part of Garage Living Quarters and Consequently Not a Nuisance.

A garage or a repair-shop is not of itself a nuisance and if it is conducted in a proper manner, in a suitable locality, it is perfectly lawful and legitimate. If, on the other hand, however, it is dangerous to surrounding property, or to the health of those living nearby, or if excessive noises or offensive odors are permitted to come from the premises, it may be a nuisance and in that case the residents will succeed in having the court order that the objectionable noises or odors be discontinued.

A case where a complaining party was not successful in his attempt to restrain a garage keeper is the case of Stein against Lyon, 91 N. Y. App. Div. 593. The suit was brought to restrain the garage keeper from violating certain building restrictions which were on both her own property and that of the garage man.

The deeds under which the two held their property provided that no one should erect, maintain or permit any mechanical or mercantile business, or any building other than a dwelling house on a certain portion of the property. The garage keeper built a motor car station on the property.

Business Was Lawful and Legitimate So Court Refused to Interfere With It.

The court found that the part of the building which was on the restricted premises was used as a kitchen, bathroom and apartments, and therefore could not be objected to as being against the restrictions.

The complaining party then contended that, as the motor car station was on a boulevard it was a common law nuisance, but the court denied this contention also, saying that as the business appeared perfectly lawful and legitimate it was not a nuisance and the garage keeper was entitled to go on with it as long as it was conducted in the proper manner.

In a New Jersey case, that of O'Hara vs. Nelson, 71 N. J. Eq. 161, an application for an injunction was made on the ground that a garage was a nuisance because of the noise, odor and danger arising therefrom. It was proved that there was a constant noise in and about the garage and that offensive odors were discernible in its vicinity.

The court held that the storage and handling of gasolene under proper precautions is not a nuisance, but that where an utter disregard of the commonest measures of safety was shown, as in this case, and the lighting of matches and the practice of smoking were allowed, and when the building was lighted by gas light, an injunction was properly granted enjoining the continuance of the nuisance.

When the dealer therefore takes proper precautions as regards offensive odors, light, noises, etc., there is no reason why he should not continue in business without fear or worry as to the outcome of any application which may be made to the court by his neighbors.

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Dovetails Supply Manufacturing and Distributing, Wholesale and Retail

THere is one of the largest motor car supply houses in the country. During the year gone by it distributed a million spark plugs in addition to manufacturing a good part of the supplies it sells. The business moves along as smooth as grease—never a hitch—and the answer is to be found in the organization.

System Is Basis of Chicago's Greatest House.

Available Space Scientifically Used for Stock.

Operations of 300 Men Constantly Under Check.

ONE MILLION spark plugs a year! That is the number that was distributed by the Beckley-Ralston Co., Chicago, Ill., last year, and the fact goes a long way toward making plain the really tremendous amount of business that is transacted each year by this great motor car accessory house.

Nor is the Beckley-Ralston company merely a distributer, though it is a whaling big one; it is a manufacturer as well, producing a considerable portion of the supplies it sells; furthermore, it distributes, in many cases, the entire outputs of other accessories manufacturers as well. But above all it is a business organization, efficient, alert and progressive.



Fig. 1—The building occupied by the Beckley-Ralston Co. is located at the corner of 18th street and Michigan avenue and was constructed for the purpose. There are six stories, each with a floor area of 8,500 square feet, and an extensive basement

The organization is housed in a six-story building which was erected for the purpose; something more than 70,000 square feet of floor space is used. But not even that is enough, for in one year the business has outgrown its physical confines and latterly a two-story garage about 50 x 50 feet and adjacent to the main building was taken over for the storage of barrels of oil, bumpers, heavy jacks and other merchandise which moves comparatively slowly. Beside the garage there is another small building which is used for the storage of calcium carbide, the law making the segregation of this material imperative. All told.

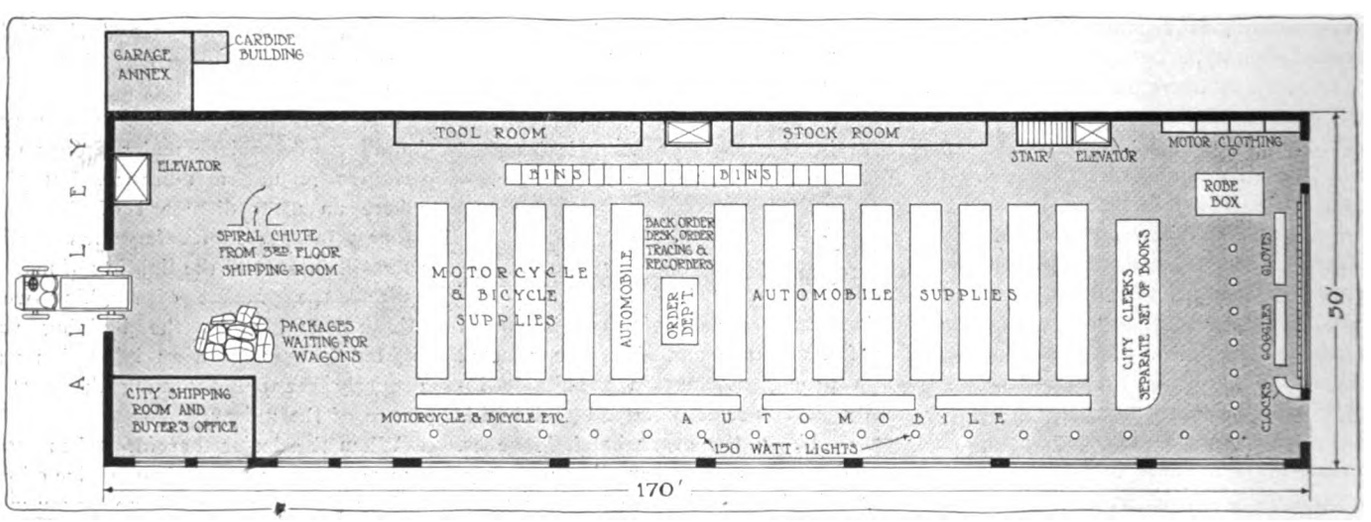


Fig. 2—In the arrangement of the main floor, where both retail and wholesale business is carried on, everything has been placed from an efficiency point of view. As 65 per cent of the business is in motor car supplies these are placed nearest the entrance. Quick-moving merchandise is located where it is convenient to salesmen and slow-moving articles are placed in the background, out of the way. The shipping room is at the extreme rear with an entrance on an alley

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more than 300 men are employed in the building and on the road.

The building which houses this mammoth organization is a model of its kind. It stands at the corner of Michigan avenue and 18th street. Next above the basement there is a main floor with a mezzanine gallery and five floors each providing about 8,500 square feet of space. The building itself is shown in Fig. 1 and in Fig. 2 is shown the arrangement of the main floor where the stock is disposed in a scientific manner.

Illumination Carefully Worked Out.

The main floor, with the mezzanine, holds the open stock for both wholesale and retail distribution. The second floor is for the general offices and the third is used as a shipping room. The fourth contains surplus stock of motor car, motorcycle and bicycle supplies, and the fifth complete bicycles, bicycle wheels and rims and some motor car supplies. The sixth or top floor is the overflow of the fourth.

Illumination has been given much consideration where necessary and the main floor windows are exceptionally large. Because this room contains two floors, the main and mezzanine, such windows were necessary for allowing sufficient light to enter during the day. Aside from the large windows, 20 large milk-glass globes, each containing a 150-watt tungsten bulb, are used as auxiliary illumination. The other floors of the building containing stock are not well illuminated. This is due to the large amount of material on the floor and the absence of windows on one side of the building.

Two Elevators and a Chute Employed.

The general offices on the second floor, however, have been considered carefully, excellent illumination being effected by large windows assisted by tungsten bulbs in milk-glass globes, as on the main floor. One of these globes is placed every 15 feet on the ceiling, which is white to assist in brightening the offices.

Before erection it was anticipated a central location for the shipping room would be necessary and that some means of sending the wrapped articles to the shipping platform would be essential. Hence, a spiral chute was conceived and installed by the Alvery-Ferguson Co., Cincinnati, O. This chute starts on the third or shipping floor and terminates about 20 feet from the shipping platform on the main floor at the rear of the room.

Beside the spiral chute two other means of internal transportation are in

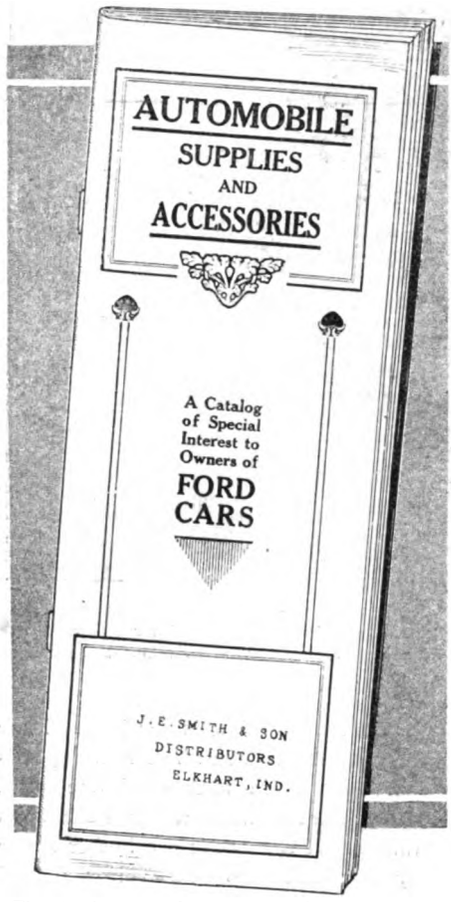


Fig. 3—Among other catalogs that are gotten out there is one devoted to Ford specialties. It is distributed to retail dealers whose name appears on the cover.

service. There is a large 15 x 15-foot elevator, for heavy and bulky items, and an automatic electric dumbwaiter for express and light orders. The automatic elevator requires pressure on a button for operation. The goods are placed upon it, a button is pressed and the dumbwaiter will stop at the floor corresponding to the number on the button. This installation is the work of the Burdett-Roundtree Mfg. Co., Chicago.

The basement floor extends under the sidewalks both on 18th street and Michigan avenue, and is used as a storeroom for surplus stock which requires semi-darkness and slight moisture. Rubber goods, such as tires and tubes, water hose and rubber matting, cables and ignition wires, and all other material which might be affected by extreme dryness or light, and in addition, heavy, bulky items, such as automobile springs, large tire-saving jacks, bumpers, etc., are stored here.

Bulky Articles Stored in Basement.

The goods are segregated according to class, tires being placed in racks extending almost to the ceiling. These racks are so located that they occupy the darkest portion of the room and in this way the rubber being unacted upon by the light, does not deteriorate rapidly. The heavy material, such as springs and jacks, is kept in large bins at one end of the floor and away from any entrance so that they will be out of the way of the faster moving and lighter items. (Fig. 4.)

On this floor, as well as all surplus stock floors, racks or cradles are hung from ceiling cross-beams, as shown in



Fig. 4—Looking down one of the broad aisles of the retail department. Every available inch is used for display purposes, even including the tops of the showcases and the floor in front of the counters. Note the great white globes that furnish illumination.

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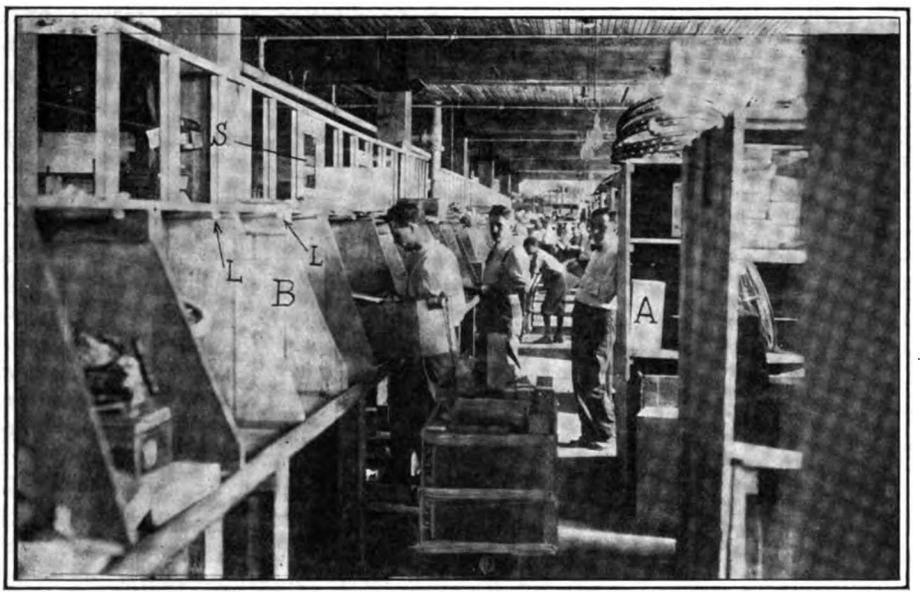


Fig. 5—Clerks place each part of an order in the same bin in the shipping room. When complete the order is transferred to another bin (A). These have screen doors (S). The lever (L) permits the door to be opened, when the order is complete, by the shipping clerk, who removes the complete order for packing

Fig. 6. These racks are used to store light materials in boxes or small packages. Such construction saves floor space and allows of considerably more stock in a given room without exceeding the 150-pounds per square foot limit.

The main and mezzanine floors hold the general stock for both country and city deliveries. A plan of the main floor (Fig. 2) shows clever arrangement, but it lacking in one respect, i. e., the show windows are rather small and unattractive; but this concern doing only a small amount of retail business can disregard elaborate window displays.

On the second floor are the general offices and about 110 people are employed here. On this floor also is the parcel post department, which does nothing but pack and ship orders to go by parcel post. The stationery vaults and advertising or catalog department are also on the second floor.

The third floor is the shipping department, the return goods section and the specialties department. The return goods department is in charge of one man, who examines goods which have been returned. If the goods are in fair shape they go back into stock; if damaged they are placed with the odd lots, and if there is apparently nothing wrong the matter is taken up with Superintendent Rector.

Prepares Its Own Assortments.

The Beckley-Ralston company puts out many assortments, such as washers, nuts, bolts, cotter pins and gaskets. These assortments are made up on this floor by four men. The components of the assortment are placed in cans, boxes, etc., and then packed and placed in surplus stock awaiting a demand from the main floor. The main portion of the third floor constitutes the shipping room.

The first section of the surplus stock is on the fourth floor. The floor space being very valuable, means had to be taken to get as much stock as possible in 8,500 square feet. To do this, racks and cradles have been erected such as are shown in Fig. 6. These cradles and racks are merely suspended platforms fastened to the ceiling cross-beams. The racks are used for light boxed or canned materials, heavy, large or bulky articles being placed on the floor. At one corner of this room is a separate, caged room for stock which might be carried off by people, such as sweater coats and clothing, Klaxon horns, etc., which are small and yet comparatively valuable.

The stock on the surplus stock floors is kept by one man and as many assistants as he may require. A card index system is used for keeping a record of quantity of certain articles on hand. For example, the card for priming cups reads as follows: May 1, 776; May 10, 1,126; May 20, 1,276; May 30, 1,654; June 5. 1,424.

Perpetual Inventory System.

Thus on May 1, 776 cups came in. The next entry shows the addition of 350 cups, the next 150 cups, the next 378 cups, while the last shows that 230 cups were sent out.

On the fifth floor are kept bicycles complete, bicycle wheels and rims. The rims of bicycles, as well as motor cars, are kept in racks as shown in Fig. 6. The rims are bound with slats in lots of 12 or more and then placed on the cradle. This floor is used somewhat as a storeroom for empty boxes for the assortments.

The sixth floor is used for additional surplus stock and is merely an annex of the fourth. Old lumber is here converted into shipping crates and boxes, two men being kept busy making different-sized shipping boxes, etc. At one end of the sixth floor is the odd-lot, dead

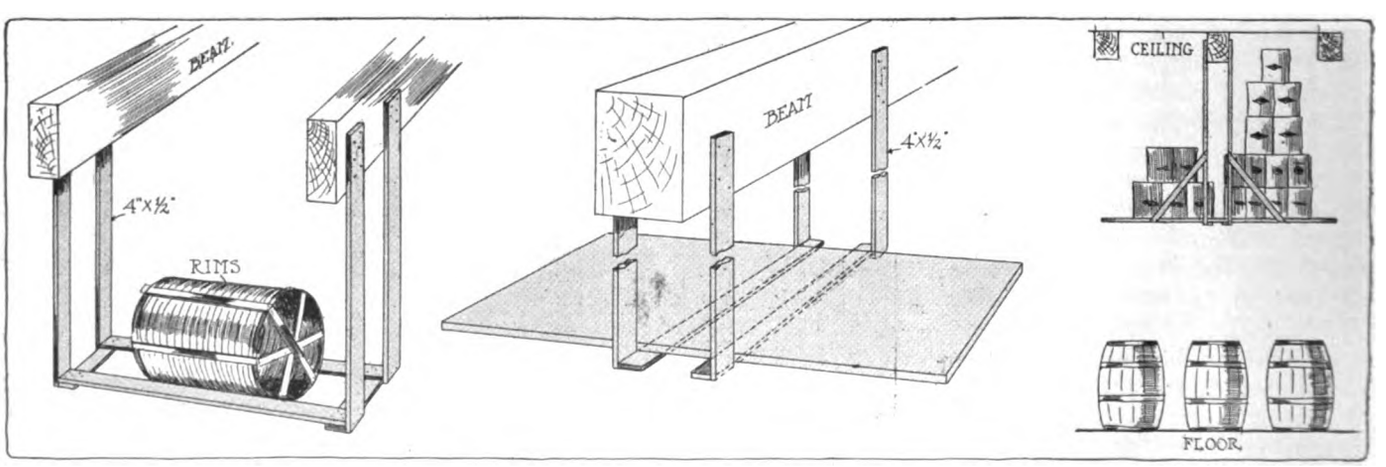


Fig. 6—In order to conserve floor space part of the stock is stored in racks slung from the ceiling beams. These are simply constructed and inexpensive. Two types of these hanging racks are illustrated herewith.

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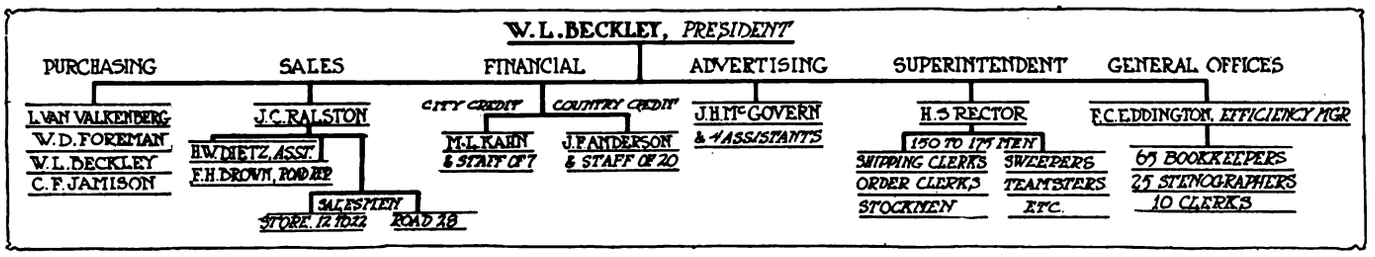


Fig. 7—Organization is the basis of the success made by the Beckley-Ralston company. W. L. Beckley is at the head of affairs with jurisdiction over the establishment in every detail. Beneath him the other officers and men are divided as shown in this chart.

stock department. Here material which sells slowly, which has been supplanted by improved types, and in general material which the company wishes to get rid of as soon as possible, is kept.

Wholesale and Retail Business Together.

The city business, which is conducted principally on the main floor, requires that the stock arrangement be systematic and calls for two bookkeepers and a cashier, together with a packing and shipping department at the rear. Although the city department is separate from the country in some respects, still the material is drawn from the same stock and one inventory kept.

The totals of the city business and part of the city bookkeeping is done in the general offices. The city totals are added to the country, thus really uniting the two divisions. The city department may use the country shipping room and the clerks work for both country and city sections; so in reality the city department is better called a sub-division of the country and not an entirely separate city store.

The main floor may be divided into six departments, namely, clothing, motor car supplies, motorcycle supplies, bicycle supplies, city bookkeeping and cashier's department, and the city buying and delivering sections. More than two-thirds of the room is devoted to motor car supplies for both wholesale and retail.

Careful Segregation of Stock.

The clothing department, to the right of the main entrance, is not a large one. A long row of black boxes is used to keep caps, gloves and similar goods. The display for these is in a showcase directly behind the main window facing Michigan avenue. Robes are kept in a huge wooden box lined with rosewood or similar wood to prevent destruction from moths. Next to this box are six cases packed to capacity with raincoats and dusters. As many as 25 coats are packed in one case.

The supplies for motor cars, motorcycles and bicycles are kept in drawers, bins, racks, etc., depending upon the

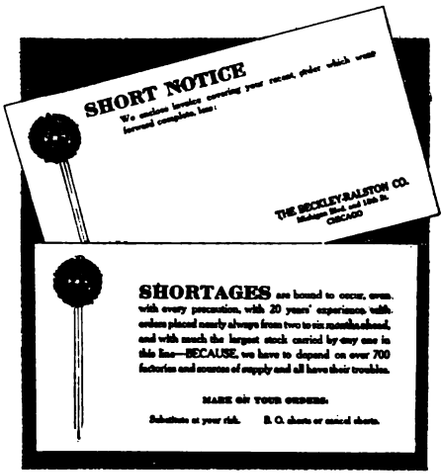


Fig. 8—Shorts on orders are inevitable at times and this is the form that accompanies orders which must be shipped incomplete. It is an explanation as well as a memorandum of the shortage

nature of the material; the racks are located in sections such as shown in Figs. 9, 10 and 13.

These sections are about 18 feet long by 4 feet wide and 10 feet high. There



Fig. 9—Behind the scenes showing one of the stock sections on the main floor. From here counter sections are supplied. The drawers hold switches; the section C is devoted to spark plugs. An index (A) designates the exact location of every kind of spark plug

are 11 such sections, eight of which are devoted to motor car supplies only, while the other three are for motorcycle and bicycle sundries.

Between each section there is an aisle about four feet wide. Directly in front of these sections is a series of counters which are used by the salesmen.

City Buyer Occupies a Dais.

Aside from containing open stock, the rear of the main floor, which is a dais, contains the city buyer's office and the city shipping room. The city buyer takes care of the purchase of material not on hand but which may be procured of another Chicago house, and in this way the dealer's order is filled completely.

Opposite the buyer's office is the shipping platform, termination of the spiral chute, and freight elevator. The mezzanine floor is merely a continuation of the main floor.

There is no definite arrangement of the stock on the main floor; all articles pertaining to ignition are not together, all rubber goods not in one section. The articles are segregated according to their selling value, the demand for them and their size and weight. Valuable, breakable material is kept in a separate room on the mezzanine floor and is in charge of one man. Here, lighting bulbs, platinum vibrators, etc., are kept, and only upon application to the man in charge can goods be obtained.

In the rear of the mezzanine floor is a counting room, where small parts which come to the store in large lots are checked up.

Twelve Clerks on Duty.

The clerks, 12 in number, work from 7:30 in the morning until 5:45 at night, with three-quarters of an hour off for lunch. It is so arranged that there are a number of men working during lunch hour. In selling material these clerks make out a blank in duplicate, both of which go to the cashier to be filed. These men are responsible for their stock and each night a check is made of the stock in the section. If the section is run-

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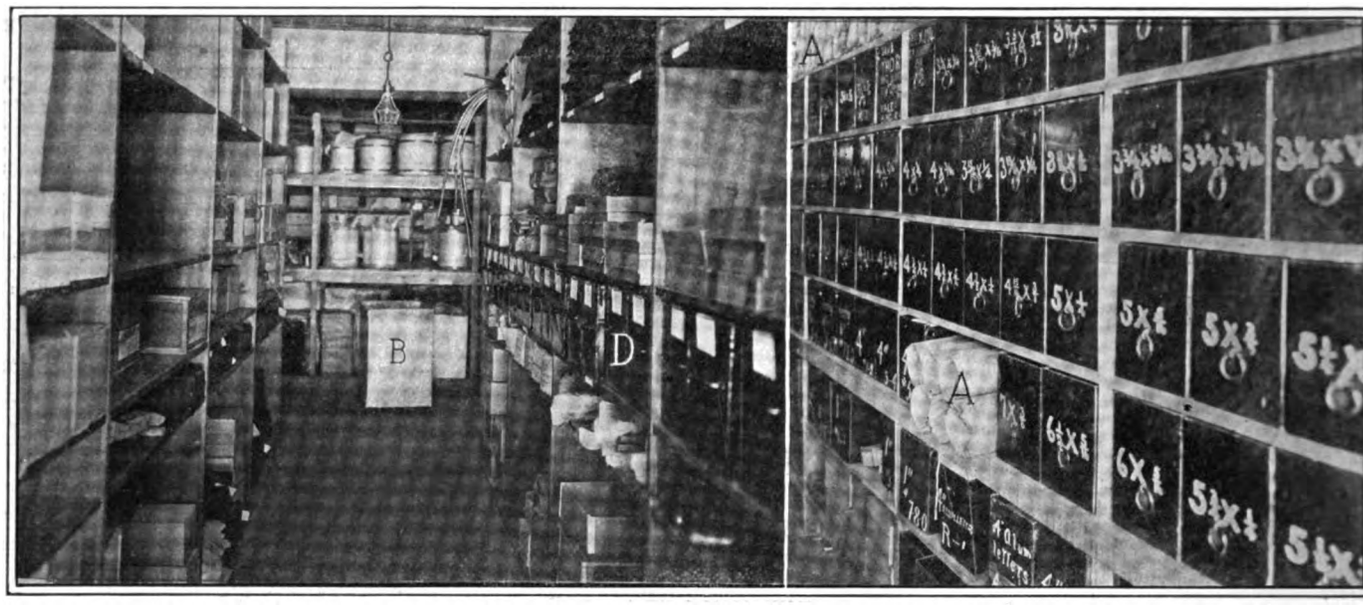


Fig. 10—Two views of the balcony, the left showing storage of heavy or bulky material not in great demand. Small paint brushes are stored in the drawers (D). One of the hand trucks for collecting parts of orders is shown at (B). At the right are shown the metal drawers containing piston rings. The drawers are replenished from the packages (A).

ning low on any particular article the surplus stock department sends more of the same material from its supply on requisition.

The window displays on the lower floors are poor, but once a person enters there are a number of things on racks and tables to attract his attention. Batteries, electromagnets for recharging magneto magnets, bumpers, wrenches, funnels, etc., are on display along the wall opposite the counters. This is a good thing, for should a buyer happen to be idle waiting for a salesman he will busy himself looking at the articles on display. The displays are complete and hence he need ask few questions.

Fast Moving Stock Is Handy.

The segregation of goods on the main and mezzanine floors to supply the retail trade shows much thought. The main floor proper contains the fast movers and things which are not too large or bulky. Fast moving stock of rather large size is carried on the mezzanine floor, although this also carries some small articles which need not necessarily be close to the salesman. Spark plugs are kept in the front of the main floor in drawers in the country for ready sales and in the sections for resupply.

The arrangement under the counter is shown in Fig. 13 and the system employed is interesting. The surplus supply of plugs is kept in the section directly behind the counter shown. A chart index to the drawers is used, the first portion of this chart reading thus:

C1.....AC 1-2 Reg.
C2.....AC 7-8 Reg.
C3.....AC Metric
C4.....AC 7-8—18
C5.....AC Ford

These references are made to the drawers, which are arranged in rows, the top row being A, the next B, the next C, etc., to E. The first drawer is 1, the next to the right 2, the next 3, etc. So that C1 would be the first drawer in the third row. In this way should a customer ask for AC metric the salesman would look on the index chart and immediately go to the third drawer in row 3.

Simple Stock Designation Method.

The drawers are marked with both the stock number and the name of the article, but this is not carried out on all drawers in the room, as most of them contain only the stock number; but since plugs are fast sellers it helps matters to place the name on the drawer also. In the spark plug section, which is the first from the entrance of the store, are kept ignition coils, electric switches and other electrical equipment, but not all of it, for some may be kept in another section. (Fig. 11.)

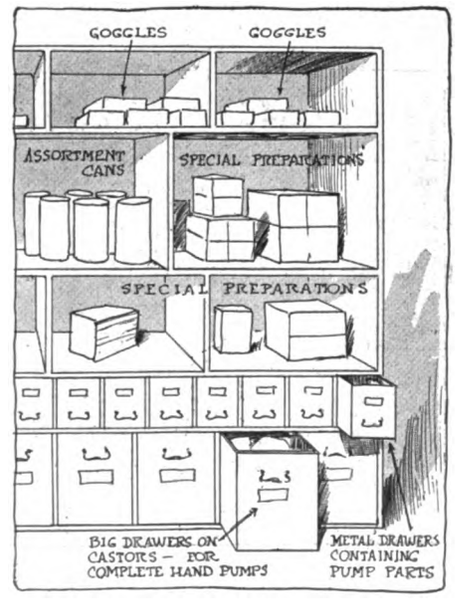


Fig. 11—Showing the arrangement of a section of the stock, large metal drawers with smaller ones above them and shelves for assortment cans above the drawers

The drawers are supplied from the sections and the sections are refilled from the surplus stock on the fourth and sixth floors. The other counter drawers contain small articles which must be had quickly—plug connectors, ignition terminals and other small much-in-demand articles.

One Man in Charge of a Section.

On the main floor there are various sections. One section may have five or six different articles and the front of the section may contain a display of as many more which do not necessarily indicate the contents of the rest of the section. Of course, all valve-grinding compound is kept in the same section, all tire cements and pumps, etc., in the same section.

Each section is in charge of one man, who does not necessarily handle all customers who want things out of that particular division. By taking charge is meant he must check up the stock every night and determine just how much of a resupply will be necessary in the morning. The order for the supply is given to the surplus stock man, who sends down the required amount of material. These clerks, besides attending to city customers, handle the country

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orders, getting the materials together and seeing that they get to the shipping room.

On one part of the main floor is a tool room (Fig. 13), which contains comparatively valuable material, such as stocks, dies, drills, taps, etc. This room is in charge of one man.

At the head of this concern is W. L. Beckley, who as the guiding spirit, controls the purchasing department, consisting of four men and as many other heads as are required by circumstances. W. D. Foreman is the technical buyer and it is his business to examine and pass upon every accessory up for consideration. The technical buyer passes upon it from a practical and theoretical point of view and in most instances disregards the selling magnetism, leaving that to Mr. Beckley and the staff.

Purchases Must Pass Censor.

J. C. Ralston, for instance, may be called in for an opinion on the selling value of a given article after the device has passed the technical censor. In this way only those accessories which are of real worth and have good selling features are carried.

Next in importance to the purchasing department comes the sales force, which disposes of the stock accumulated by the first branch of the business. At the head of this end is J. C. Ralston, who does the managing with the aid of two assistants, one a road man and the other a house man. Under the three sales heads are 40 salesmen, 28 of these being on the road while the remaining 12 are store men. Of the 28 on the road, four specialize in handling jobbers.

The city sales department, entirely distinct from the country department, is composed of the 12 floor men, clerks, bookkeepers, etc., managed by Mr. Ralston. Fig. 7 shows the business charted.

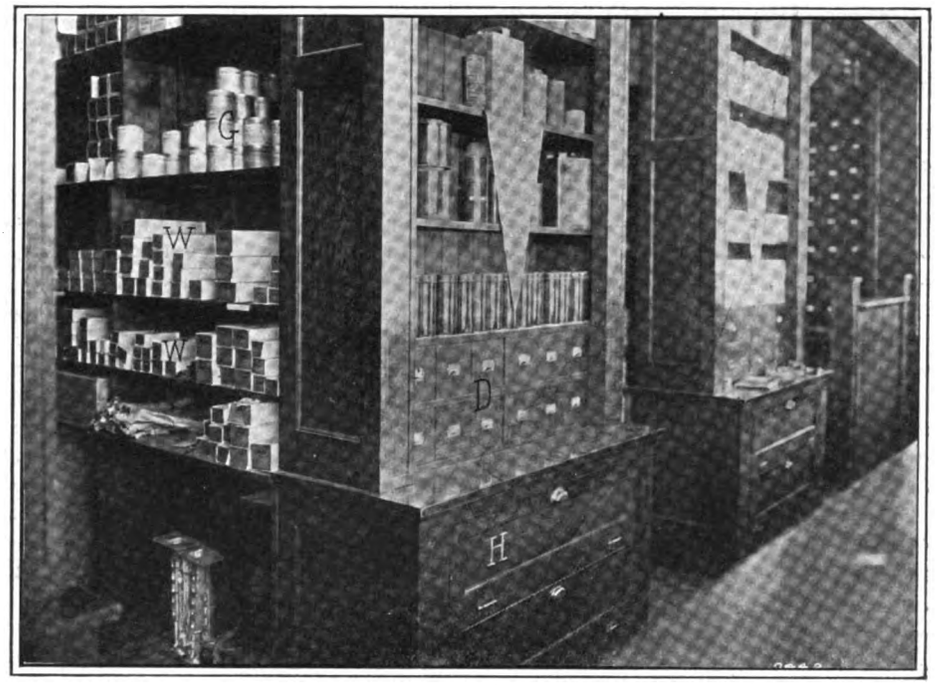


Fig. 12—Close view of one of the main floor sections. The small drawers (D) contain curtain fasteners, etc.; above them there are tire repair outfits and paint. Wrenches (W) and valve grinding compound (G) are placed at the side. The hinged compartments (H) contain long articles, such as top bows, pumps, etc.

Advertising Department is Small.

The third important division of this concern is the financial department, headed by Gordon Beckley. This division is subdivided into two parts, a country and city credit department, the former headed by G. F. Anderson and the latter by M. L. Kahn. The respective staffs are 100 and 7 people, more or less.

A rather small advertising department operates, this being better called a catalog department, for most of the advertising is in the form of booklets, folders, etc., gotten up by J. H. McGovern. This division sends out flyers, gets up the yearly catalog and the monthly bulletin.

At the end of every month a regular bulletin is gotten up by this catalog department and in the back the job lots are listed. In the front new articles are listed. This bulletin assists the road men. They receive a copy every month no matter where they are and then they are in a position to sell a customer the newest on the market and also get rid of any dead stock. Mr. Ralston states, however, that during show time, when



Fig. 13—Spark plug stock is kept in drawers marked A, B, C, D and E from top to bottom and 1, 2, 3, 4 from left to right. An index indicates the location of any particular make of plug. At the right is shown the tool room which is about 40 feet long; this houses the stock of tools

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the buyers flock to town, the dead stuff is shown to them and they buy it up quickly.

Aside from this method of advertising the concern does flyer work and special catalog jobs. All the flyer printing is done on multigraph machines. One of the special catalogs is shown in Fig. 3. These are sent out in lots of 25 or 50 to a dealer, who is supposed to distribute them. It will be noted there is nothing on this booklet to indicate where the goods come from and the one receiving it from the dealer will naturally go to him to get it. He in turn will come to Beckley-Ralston for an order.

When an order comes to the concern from the country, the letter is opened by a clerk on the second floor. The order then goes to the credit department and then to an order writer, who copies the order on a uniform sheet which carbons in triplicate. The work is done on a typewriting machine with a special billing attachment. The typewritten order then is checked against the original request and the order goes to the credit department for rechecking. Leaving the credit department it goes to the order department in the middle of the main floor. This office keeps a record of the orders and can at any time tell just how much of an order was filled, when it was filled and what was omitted and placed as a backorder, etc.

The order blank is next handed to an order clerk, who gathers the material for filling the order. He glances at the blank and gets those articles which he can on the main floor, places them in a bin and after the bin contains everything possible to obtain from the main floor the goods are placed in a truck and tagged with the order number. This truck goes to the shipping room, but the order clerk still has the order blank and proceeds to gather the rest of the material not on the main floor. He may go to the fourth floor for a truck load and again to the fifth floor. Each truck is marked with the same order number and the truck is taken by the clerk or someone else to the shipping floor. Shorts are indicated on Fig. 8.

As the trucks go to the shipping floor the materials are removed and placed in a bin. All trucks bearing the same number have their contents removed and placed in the same compartment, and after all the trucks with the same order number have been emptied into one bin and the order is supposed to be complete the clerk takes them from that bin and places them in another. (Fig. 5.)

After being packed the articles go down the chute or elevator to the shipping platform. The order blank goes to the billing department. This is the path of all orders, wholesale city or wholesale country, except small packages which the buyer carries with him.

In Salesroom and Garage

The Auto Sales Co. and the Capital Car Co., which have been doing business under the name of the former at Wheeling, W. Va., have separated. The Auto Sales Co., which handles the Overland car, will continue business at 16th and Market streets, while the Capital company will establish new quarters on Market street.

The Blain Auto Co. has sold its motor car and accessory business to the Van Brunt Overland Co., of Sioux Falls, Ia., which will continue the business at the same location, 215 South Lincoln street, Aberdeen, So. Dak. J. H. Bell will remain as manager.

The Halliwell Co., of Seattle, Wash., which recently absorbed the Northwest Electric Co., has removed to larger quarters at 606 East Pike street. In addition to marketing motor car accessories, the company will operate a large electric shop.

The McKenney-Devlin Co., organized by Paul R. McKenney and Lyle A. Devlin, has located at 799 Woodward avenue, Detroit, Mich. The company has secured the distributing rights for the Detroiter cars for the State of Michigan.

The Knight Tire & Rubber Co. has opened a Northwest supply depot at 1710 Broadway, Seattle, Wash. It will be managed by E. J. Moskowitz and will care for the trade in Washington, Oregon, Idaho and British Columbia.

C. R. Dallenbach and E. H. Schwartz have organized the Ellwood City Auto Co. at Newcastle, Pa., and opened a garage at Tenth street and Factory avenue.

The Moylan-Reilly Automobile Co. has secured the agency for the Chevrolet and Lozier cars in Spokane, Wash. Its salesrooms are located at 424 and its garage at 430 Second street.

The R. P. Whitty Co. has let the contract for the erection of a two-story brick garage at 1529 North street, Washington, D. C. The estimated cost is $20,000.

Under the style Auto Hospital, a repair-shop has been opened at 205 Tenth street, Toledo, O. O. L. McCormick is in charge.

The Newbury Garage is the style of a new enterprise at Newbury and Pleasant streets, Worcester, Mass.

O. F. Anderson has opened a garage at Ceresco, Neb. He has the agency for Buick cars.

A. W. Smith has enered the garage business at Poland avenue and State street, Struthers, O.

Real Carson, Cary Adock and Howard Guy have opened the Ford Garage at 130 West Jackson street, Macomb, Ill.

Frank Schermerhorn has taken over the business of the New Division Avenue Garage at Grand Rapids, Mich.

The Tire Sales Co. has started in business at 917 Liberty avenue, Pittsburg, O.

New Agencies Established.

Place	Car	Dealer
Albany, Ill.	Saxon	J. W. Dineen
Albany, N. Y.	Hupmobile	The Stutz Auto Co.
Anaconda, Mont.	Regal	Frank M. Osborne
Bellefontaine, O.	Saxon	Hornsberger Garage
Berlin, Ont.	Regal	E. L. C. Browne
Clinton, Ia.	Saxon	Saxon Motor Co.
Cleveland, O.	Dodge	Neighbors Motor Co.
Cleveland, O.	Dodge	Neighbors Motor Co.
Cleveland, O.	Hupmobile	Richardson Mot. Car Co.
Columbus, O.	Oakland	Oscar Lear Motor Co.
Convoy, O.	Saxon	W. G. Campbell
Columbus, O.	Oakland	Oscar Lear Motor Co.
Denver, Col.	Regal	Mid-West Auto Sales Co.
Denver, Col.	Apperson	Wm. Thorney Auto Co.
Denver, Col.	Dodge	Tom Botterill
Des Moines, Ia.	Regal	Means Automobile Co.
Detroit, Mich.	Monarch	Owen-Schoeneck Co.
Detroit, Mich.	Detroiter	McKenney-Devlin Co.
Fredericksburg, Va.	Saxon	W. A. Richards, Jr
Glendive, Mont.	Saxon	David Leidahl
Hinton, Okla.	Regal	Jas. A. Knox
Howell, Mich.	Buick	C. B. Atkin
Johnson City, Ill.	Saxon	Colp Mercantile Co.
Kingston, N. C.	Saxon	Kingston Garage
Louisville, Ky.	Dodge	Southern Motors Co
Marquette, Mich.	Regal	Astre & Palmer
Mildmay, Ont.	Regal	Geo. Kunsman
Milwaukee, Wis.	Regal	Regal Motor Co
Minneapolis, Minn.	Regal	Regal Motor Co
N. Cumb'land, W. Va.	Regal	Scott Bros.
Olney, Ill.	Saxon	Auto Supply Co

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RECENT DEVELOPMENTS in ACCESSORIES

Low Priced Decarbonizing Outfit.

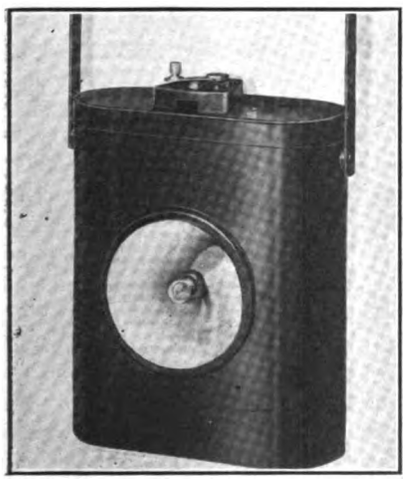
The Oxygen Generator Co., Inc., 301 River street, Troy, N. Y., which formerly operated as the Oxygen Decarbonizer Co., has brought out a complete plant for generating oxygen and applying it in carbon removal, the whole set listing at $15, with sufficient chemicals to decarbonize about 18 cylinders. The generator is about 2½ feet high and stands on strong legs.

The makers state that the low price is due to the fact that it is sold practically at cost, the idea being to create a market for the chemicals with which the generator is charged. The substance is called oxygas and is packed in 4-pound tins which sell for 83⅓ cents each when purchased in lots of six. One can of the oxygas is said to generate sufficient gas to decarbonize six cylinders, which would make the cost of gas per cylinder about 14 cents.

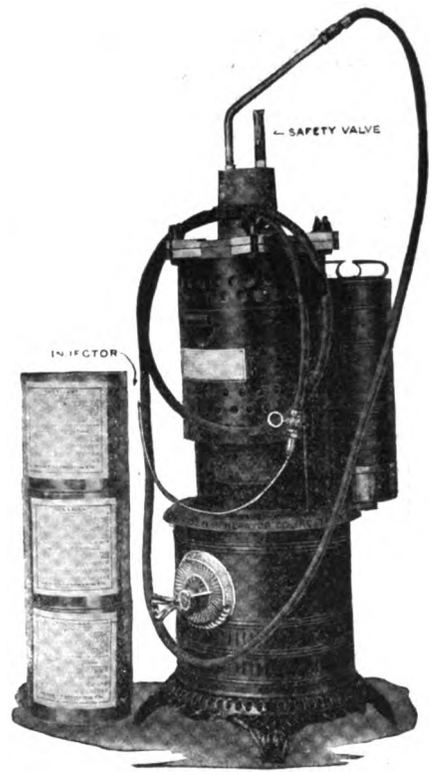
The generator is of heavy cast iron with tight joints, so that it will hold gas for weeks, the makers state; a safety valve is provided to prevent the accumulation of excessive pressure. The shipping weight is approximately 50 pounds.

J.-M. Mobilite Electric Lantern.

Electric light, in an appropriate and satisfactory form, is an ideal illumination for most purposes; and in bringing out its Mobilite electric lantern the H. W. Johns-Mansville Co., New York, has aimed to eliminate the possibility of trouble and to produce a lantern of genuine utility. The device consists of a casing big enough to contain two dry cells of standard size; a reflector and lamp project a strong beam, and a bail handle is provided for convenience in carrying.



Two standard dry cells satisfactorily operate the Mobilite electric lantern



The Oxygen decarbonizer generates its own gas and is complete in itself

A removable cover at the top is provided for inserting cells, and on the top of the cover is the switch by which the light is turned on and off. The lamp is a tungsten bulb consuming 1/5 ampere at 2½ volts and the reflector may be either silvered, for projecting a sharp pencil of light, or white enamel, for throwing a diffused light. The dry cells supplied by the makers especially for this lamp are made in three types, differing only in ampere-hour capacity, the outputs being 20, 30 and 35 amperes respectively. Used intermittently, the lamp will burn for at least 100 hours, according to the makers.

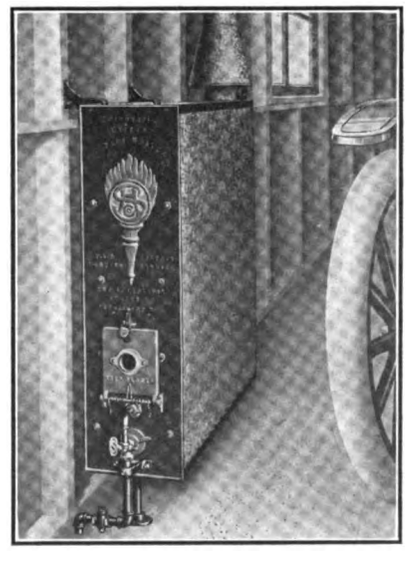
The price of the lantern, without battery and with either type of reflector, is $3.50; the special dry cells cost 25, 35 and 45 cents each, according to capacity. Ordinary standard dry cells can be used, however, so that fresh cells can be obtained almost anywhere when renewal is necessary.

Safety Gas Heater For Garages.

By applying to a gas heater the principle embodied in the miner's lamp, the Scientific Heater Co., Cleveland, O., has succeeded in producing a heater designed for garage and shop service that is said to be perfectly safe, even in the presence of inflammable vapor.

Either natural or manufactured gas can be used in the heater, which is of a narrow rectangular form that makes it easy to install where space is limited. A regulating valve in the feed-pipe, near the floor, provides for varying the intensity of the flame, and a small pilot light, which burns a negligible amount of fuel, eliminates the necessity for lighting matches after the heater has been once started.

Three sizes are made, the largest being capable of efficiently heating a room 26 x 36; for larger rooms the heaters can be installed in multiple. As no heat is given off at the sides of the heater, a car can be placed close to it without danger of injuring the finish; the heat is made to rise. As for safety, the makers state that a board of insurance inspectors had buckets of gasolene thrown on the floor and even on top of the heater while operating at full capacity without causing ignition.



The automatic heater burns gas and requires no attention

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Small Battery Charging Device. — A device which makes it possible to charge small storage batteries from alternating current circuits is manufactured by the St. Louis Electrical Works, 5410 Easton avenue, St. Louis, Mo. Outwardly the charger is a casing which may be attached to the wall, with a lamp cord and plug for use in connecting up to an ordinary electric light socket, and two cables for connection with the battery terminals. The alternating current is taken in through the cord or cable and direct current is taken out to the battery through the two cables.

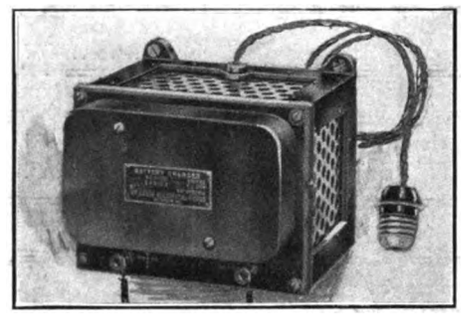
Three sizes are made. The I-M charger will charge a 6-volt battery at a 6-ampere rate and sells for $20 without ammeter, which costs $4 more. The 2-M charger will charge a 6-volt battery at a 12-ampere rate or two 6-volt batteries at a 6-ampere rate, and can also be furnished for 12-volt batteries. The 3-M is a special garage type and will charge at either 6 or 12 amperes and can operate on 6-, 12- or 18-volt batteries. Three 6-volt batteries, or one 12-volt and one 6-volt battery can be charged at once. The cost of charging an ordinary 6-volt battery is said to be from 6 to 10 cents, according to the charge made for the current.

As the current is led into the charger it goes first to a step-down coil, which is similar in principle to the step-up coil used in ignition systems taking battery current, except that it works in the reverse direction, decreasing the voltage instead of increasing it. The transformer, as it is called, is shown at T in the drawing, which shows the charger diagrammatically.

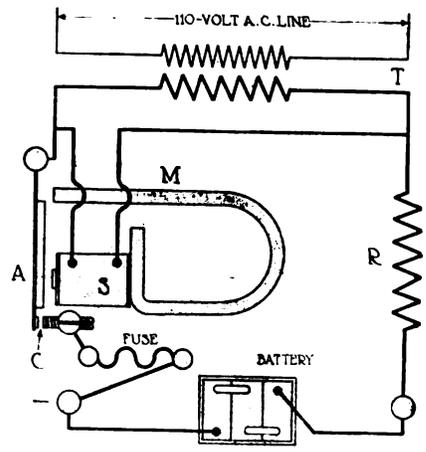
The two wires which lead from the transformer carry current of low voltage, but still alternating, which means that it pulsates first in one direction and then in the other. In other words, it reverses its direction of flow many times per second. The principle upon which the rectifier works is that of permitting all the pulsations in one direction to pass to the battery, but to hold back the pulsations in the wrong direction.

The mechanism for doing this consists of a vibrator device much like that of an electric bell. The armature A is placed opposite the electro-magnet S and has a platinum contact which, when the armature is attracted by the electro-magnet, touches the platinum point C. The electro-magnet is energized by current taken from the low-voltage leads, as shown. M is a permanent magnet on which the electro-magnet is mounted, and R is a resistance through which the low-voltage current passes. The circuit is completed through a fuse on the negative side.

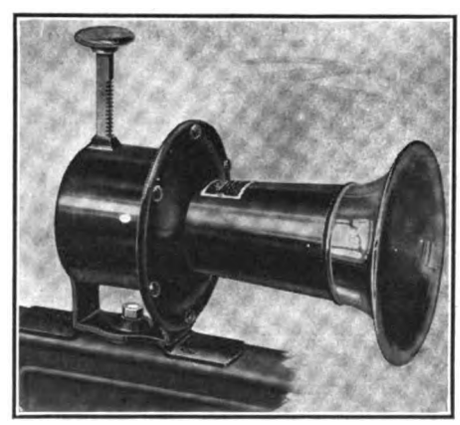
The winding and adjustments of the instruments are such that the magnet S attracts the armature A only when traversed by an impulse in the right direction for charging the battery. Therefore, when the flow of current is in the right direction contact is made at C and an impulse flows to the battery. When this impulse dies down and the opposite impulse is about to start, the armature is released, interrupting the circuit until the next impulse in the right direction closes the circuit. This occurs so rapidly that the vibrator maintains a steady current to the battery.



St. Louis battery charger for charging batteries from alternating current source



Wiring of the battery charger is simple in the extreme



A double bracket on the Stewart $5 horn gives firm support and is adjustable

In using the charger it is necessary only to make sure that the leads are properly connected to the battery—positive to positive and negative to negative—and plug in at the light socket. The charging current automatically weakens as the charge progresses and gives the tapered charge needed to obtain the best results.

Stewart Horn With Double Bracket.

In the Stewart hand-operated diaphragm horn, manufactured by the Stewart-Warner Speedometer Corporation, Chicago, the problem of attaching the instrument to the car in such a way that it will not work loose appears to be solved by the very neat double bracket employed. The bracket consists of two parts; the base is attached to the top of the body rail by six screws, being of curved form to bed down snugly and firmly on the rail, while the upper part is attached to the horn by machine screws. The two are joined by a stud and nut, the stud rising from the base plate. This makes it easy to remove the horn without taking out the screws attaching the base plate to the rail.

Pressure on the button depresses a rack which sets in motion the horn mechanism, and the double bracket takes the strain without tending to loosen. The rack is sufficiently long to permit a prolonged signal. The horn points directly ahead, so that the sound is projected most effectively. If the position of the bracket base on the rail is not parallel to the center line of the car, the horn may be swiveled slightly to bring it into the proper position. The list price of the horn, complete with bracket, is $5.

Steam Curing Bag for Tire Repairs.

The Steam Curing Bag manufactured by the K. & W. Rubber Co., 1545 Broadway, Denver, Col., has been designed to overcome the difficulties that not infrequently are encountered in appliances of this type. The makers state that the bag will last indefinitely with an occasional renewal of the curing surface which has an average life of about 300 cures.

The bag is made with a jointed rod in the center, to which the end cups are connected by special clamps. Openings are provided at each end for the supply of live steam and to permit the escape of condensed steam.

The Twentieth Century curing bag is made in seven sizes, from 2½ to 5½ inches. The prices range from $20 to $35 list.

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From the front, the appearance of the Fashion Garage suggests more a popular theater than a service station for electrics

Caring for 200 Cars Efficiently in Largest Exclusive Electric Garage

Chicago Establishment Charges 75 Batteries at Once—Distills Its Own Water—Two Crews Work Through 24 Hours.

With forty-two men on its payroll and sufficient garage room for nearly 200 electric vehicles, the Fashion Garage, Chicago, operated and owned by Harry Salvat and H. J. Neumeister, may be said to be the largest exclusive electric garage in America.

Not only is this building commodious but it has facilities for doing everything necessary to an electric, from repairing a battery plate to rebuilding an entire car. The handling of the men, the system of caring for the cars, the delivery method, the repair system and all the other systems used in this garage are worth study by others in the field or those who contemplate entering it.

Everything on Single Floor.

The Fashion Garage is a one-story building, located on the south side of Chicago in the heart of the district where fashionable women who own electrics live. A general outside view of the structure gives one the impression that it is a theatre. With its wide, arched entrances, light-colored brick ornamented cornices and artistic windows, it offers a striking contrast to the ordinary in-the-city garage.

The building is L-shaped, with an entrance at each end of the L. Originally the smaller section was intended for the housing of gasolene vehicles and the larger section for electrics only, but it was found later that the entire building had to be given over to electrics if all the business was to be cared for properly; it was found also that it was unwise to turn away electric trade for the gasolene.

Each Department Separate.

The garage, while treated as one large room, contains nine distinctive divisions, one the large garage section, another the small section, which is used for washing and storage and has no charging facilities; a repair-shop, showroom, office, battery room, stock room, paint and finishing room and boiler room. The comparative sizes of these rooms may be judged by a study of the floor plan shown herewith. The section accommodating the largest number of cars is approximately 130 x 150 feet, but some of this room is taken up by a repair-shop 18 x 50 feet, a showroom about 15 x 20 feet, and bumpers which carry the conduits housing the wires which lead to the charging plugs.

The office, 15 x 20 feet, is so placed that one in it may look through each wing of the building. The stock room, 15 x 20 feet, has been placed as near as possible to both the repair-shop and battery room so that the men will lose little time in getting materials.

Before the Fashion Garage was built a special line had to be led to the building to supply direct current, for only alternating current is available in that section of the city. But the Commonwealth Edison Co. and the Fashion Garage made satisfactory arrangements for supplying direct current, which does away with all the complications necessary when rectifiers are used. On the whole the owners state a saving is made by having the special line installed and using direct current.

Charging Plugs Centralized.

Almost in the center of the concrete floor and about 20 feet apart are two concrete bumpers, themselves 4 feet wide, 100 feet long and about 1 foot high. These bumpers house the charging wires, which terminate in plugs, from which the batteries are charged. The charging panel has circuits for 75 ground plugs, so that 75 cars may be charged at once. This board is set on

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one of the bumpers, as shown herewith. It uses a General Electric regulator and a General Electric kilowatt-hour meter. This board was made by the Allen Bradley Co. and cost $2,400 complete without installation.

The charging plugs are of the universal type, that is, they may be turned in any direction. They are fitted into openings in the sides of the bumpers. The reason universal plugs are used is to prevent snapping off of the plug attachment should a car be moved accidentally while on charge. With an ordinary plug, if the car is driven or moved away at an angle, the plug attachment may be broken.

Accommodations for Chauffeurs.

There are two large bumpers shown in the illustration herewith, which accommodate cars on either side. Two others are against the sidewalls and handle but one row of cars, while a fifth accommodates only a few and is at the extreme end of the garage. A showroom near the entrance has on display four new electrics. Chairs are placed about for customers. Next to the showroom is a small room for the checker and a telephone operator. On a part of the wall near the telephone room is a clock and a car keyboard.

At the other end of the garage in one corner of the L are the other rooms mentioned. In the small wing is washing space for cars, but no charging facilities, for, as mentioned before, this space was intended for gasolene vehicles. A large balcony above the entrance end of the room is fitted up for chauffeurs' quarters and shower baths, etc., are installed for the comfort of the men. The Fashion Garage is unusual in that it maintains these quarters for chauffeurs of electric vehicles.

At present 10 men are employed by owners, nearly all of them driving forward drive, cars and Neumeister stated that it is becoming fashionable to employ a chauffeur for an electric, and he expects more owners to follow the example of the ten.

The building is well illuminated at night, having a 150-watt tungsten bulb under a milk-glass reflector every 15 feet.

28 Specialists on Payroll.

In all, 28 men are employed in the garage, not counting the chauffeurs. Two men do nothing but chamois the bodies of the cars, two are washers, one answers the telephone, two scrub the bottoms of the cars, two clean the windows, of both the cars and the building, four men are in the repair-shop and one checks the cars in and out. At one end of the repair-shop is a woodworker and another man does trimming; two are painters, one is in the stockroom, two in the finishing room, one girl is in the office and three general men are used. Another man cleans the upholstery, while two do nothing but polish brass, etc.

Fourteen licensed chauffeurs are employed to call for and deliver cars. When an owner wishes his car driven from his home to the garage he calls the garage and the telephone operator notifies the checker. He makes out a blank to the effect that Mr. Smith's car should be called for at 5 o'clock, and at the same time he notifies one of the chauffeurs. This man goes to the home of the owner and brings the car to the garage. The checker immediately looks over the car to see that everything is all right, that a fender is not bent, or glass broken, etc.

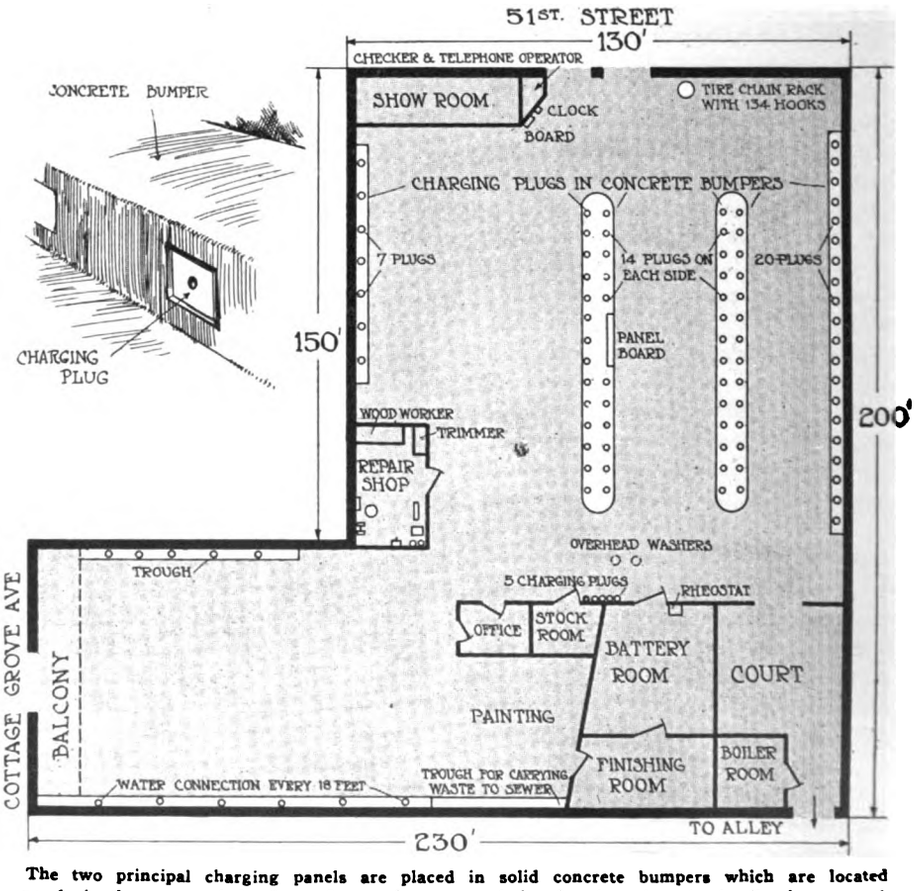
Tire Chains Properly "Filed"

An excellent arrangement has been made regarding tire chains. When a car comes in with chains attached to the wheels, the chains are removed and placed on a rack with numbered hooks. This rack is simply a wheel with the hub fastened to a steel pole attached to the ground. The spokes have hooks attached for holding the chains, and sufficient hooks are provided for accommodating 134 tire chains. Each hook, as mentioned before, is numbered, and on a board near the chain rack is the index which tells the owner's name and his chain rack number. After the checker has passed the car it goes to the wash rack, shown in the illustration, where two overhead washers are located. These washers are automatic and were made by Neumeister. The washer consists of two pipes at right angles to each other. One is movable and has a hose attached to it. When this is desired it is pulled down and water begins to flow automatically. When the hand is removed and the pipe pushed upward water stops flowing. This has brought the bill for water quite low.

Cars Checked Both In and Out.

After the car has been given a good cleaning it is backed against the bumper, usually at the same place each night, and the charging cable connected.

Should an owner wish to have his car taken from the garage to his home he calls the garage by telephone. This telephone calling is not necessary, of course, if stated times are specified. One of the men is assigned to take the car to the owner's home. The car is brought to the entrance, where the checker looks



The two principal charging panels are placed in solid concrete bumpers which are located nearly in the center of the floor—Insert shows one of the charging plugs in detail; these are of the universal type

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it over, and in the meantime the chauffeur goes to the owner's keyboard and obtains the door key for the car in order to lock the car door when he leaves the car at the owner's home. This board, shown herewith, contains a number of pockets, above which are slips with the owner's name. The key is attached to a piece of leather which just fits the pocket. The car is driven to the owner's home, the doors locked and the chauffeur returns to the garage.

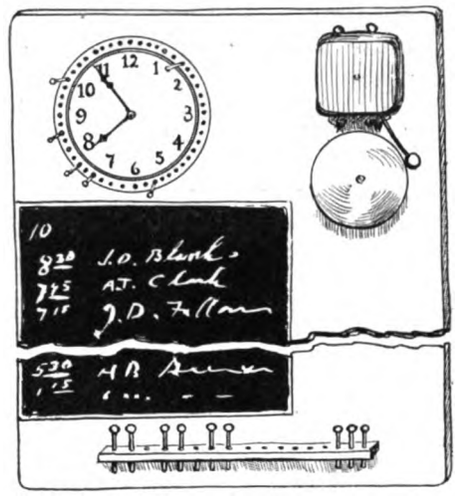
The fourteen men work day and night in various shifts, calling for or delivering cars. Two men come at 7 A. M. and work until 9, then go home and return again at 7 at night and work until midnight. Two other men come on at 8 P. M. and work until 1 A. M., while two more come on at 9 P. M. and work until 2 A. M. As nearly as possible two new men come on each hour, so that at the end of every hour two men leave and two more come on.

Clock Prevents Forgetfulness.

Very often a chauffeur is told to call for a customer's car at a certain time, and in order to remind himself of this call or any similar call he makes use of what is called a reminder board, purchased of Darche & Co., Chicago, for about $30. The board, shown herewith, has a clock at one corner set flush. On the periphery of this clock are holes, one placed at every ¼-hour mark. Opposite the clock is a large gong. At the bottom is a small rack for holding spare pins.

When a pin is inserted in a hole the gong will ring when the clock shows the time set by the pin. The major part of the board is a blackboard, upon which are written the things which the chauffeur is to be reminded of. The gong may be heard all over the building, so a chauffeur cannot say he forgot. All chauffeurs will answer the gong and the last one arriving removes the pin in order to stop the ringing.

There are four men in the battery room. One is a battery expert and is capable of repairing any battery, while the other three are flushers and also act in the capacity of repairmen when directed by either Salvat or the battery room foreman. The flushers fill the battery cells with distilled water and take hydrometer readings; in fact, they may be called chargers. They go from car to car continually and as the batteries are found charged the hoods are dropped and the interior of the car cleaned by another man. He uses an electric vacuum cleaner, made by the Atwood Vacuum Cleaner Co., Rockford, Ill.



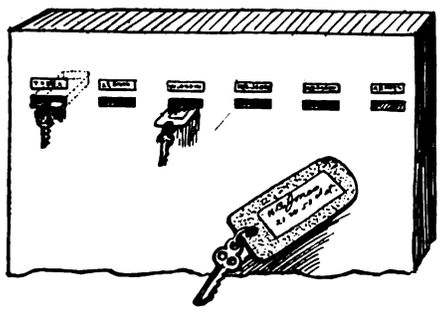
When the clock hands reach the pegs inserted around the dial a gong rings thus notifying the chauffeur of an appointment which is noted below upon the blackboard; this makes it impossible for the chauffeur to forget

The battery room is equipped so that new batteries may be made and old ones repaired. All battery sets for repair are carried on trucks, so they may be moved around easily, and when a set of batteries is finished they are brought up, or given the initial charge, from a circuit in the battery room. This circuit is controlled by a rheostat made by Schaefer Bros., Chicago, and is of the iron wire type. Distilled water is also prepared in this room by a special apparatus.

Complete Repair Department.

The repair-shop employs four men, but in the same room a woodworker and a trimmer also work. The repair-shop takes care of all car repairs except those needed for the battery. The room contains a 16-inch lathe with a 9-foot bed, made by the Bradford Machine Tool Co., Cincinnati, O.; a drill press, made by the Hoefer Mfg. Co., Freeport, Ill.; a planer with an 18-inch stroke, made by Smith & Mills, Cincinnati, O., and a solid tire setter. The latter is used for setting solid tires upon wheels. Other repair-shop equipment consists of a combination emery wheel and buffer, an air compressor for inflating pneumatic tires on the electrics, and a 5-horsepower motor for driving the machinery. One of the mechanics employed works at night, so that customers will be cared for at any time. The repair-shop is called upon to make new parts, repair old ones, overhaul cars, etc., and do the work expected of any repair department.

The Fashion Garage has two rates in force, one a $35 rate, applying to small cars, and a $40 rate for larger vehicles. These prices include calling for and delivering the car, charging and flushing the batteries, cleaning, washing, polishing and oiling. This does not include repairs. When anything is found which requires repairing the owner is notified immedately and asked whether or not the work shall be done.



Each key has a leather tab fastened to it and after the car is locked the key is filed in a slot under the owner's name



The side entrance of the Fashion Garage is no less distinctive in appearance than the main entrance and both suggest the select patronage to which the garage caters; the arched doorway and glass panels are out of the ordinary

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Advanced Maintenance

REPAIRING DAMAGED FENDER IRONS

By George Fernwell

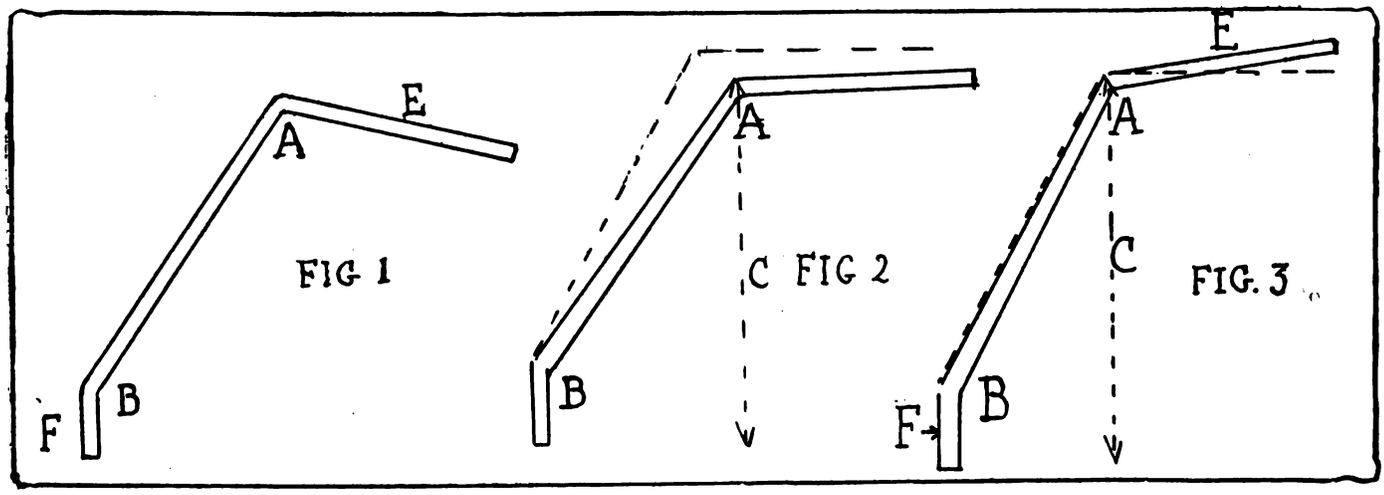
When a fender iron such as illustrated in Fig. 1 is deformed from its normal shape, it is somewhat of a tax on the judgment of the workman to determine what to take as a guide in reshaping it.

A workman accustomed to such work and having a good eye for form, outline and alignment, can usually with a few judicious applications of one or more bending irons quickly restore the fender iron to nearly its original shape. Nevertheless, he would probably find it hard to explain just how he would go about it.

As an example, Fig. 1 would show how little apparently he would have to guide him in determining whether the fender iron shown is deformed at A or B only, or at both A and B. Obviously he knows that normally E must be at right angles to F, but if he opens the angle at B until E is square with F (Fig. 2), he may then find out that because of E being lower than the corresponding fender iron on the opposite side of the chassis that the angle A will require opening also.

Then if the angle A is opened, E will once more be thrown out of square with F (Fig. 3). This will mean rebending at B and a probable continual succession of alternately bending the iron backwards at both A and B with a risk of the forging breaking, especially at the bend of B, either while undergoing the repair or very soon after when the car is in use.

Even with the corresponding fender and fender iron in good shape and attached to the chassis on the opposite side to which the fender iron is being repaired, the uninjured fender iron is concealed by the fender and made almost inaccessible for making a template of the outline of the good fender iron by the front wheel, so that to the unaccustomed eye the good fender iron is of not much assistance for comparison.



Figs. 1, 2 and 3—The workman's problem is to ascertain whether the deformation is at A, at B, or at both. A novice is likely to bend and rebend the iron, in attempting to restore its form, until it is greatly weakened, if not broken

Accordingly it is the aim here to suggest means of determining a base from which to measure in as many directions as possible in order to ascertain posi-

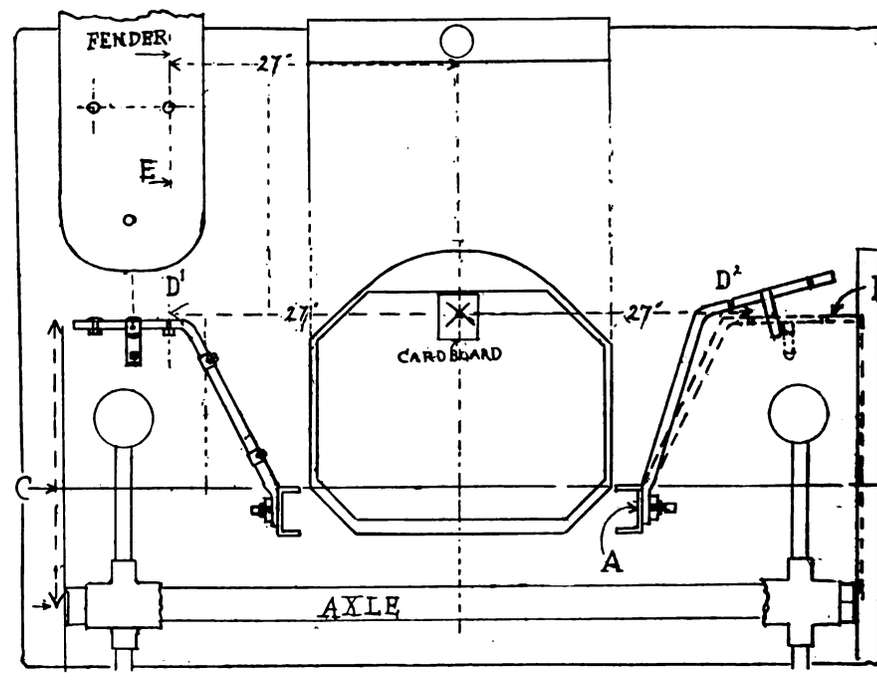


Fig. 4—The proper shape for the misformed iron can be determined by taking measurements from all available points of the good iron and making the other correspond

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tively when the fender iron is in line or what portions of it must be bent to restore it to its proper alignment. Also to accomplish the desired results without continuous bending and rebending the angles at A and B, Figs. 1, 2 and 3.

To begin with, it must be assumed that the corresponding fender to that being repaired is in a perfectly aligned condition and completely bolted or otherwise attached to the chassis and that its fender iron therefore can be used as a guide in reshaping the damaged fender.

With a rule and soft lead pencil find and mark the perpendicular middle line at the face of the radiator. To mark the line conveniently it may be necessary to stick a piece of cardboard or heavy paper on the tubular face of the radiator, so that the perpendicular line may be drawn upon it (Fig. 4). Again with a soft lead pencil, on the uninjured fender a mark a line E, Fig. 4, extending rearward from the center of the fender bolt located nearest the radiator. The line should extend parallel with outer edge of fender and far enough rearward to permit of measuring the distance from the latter to the center line of the radiator.

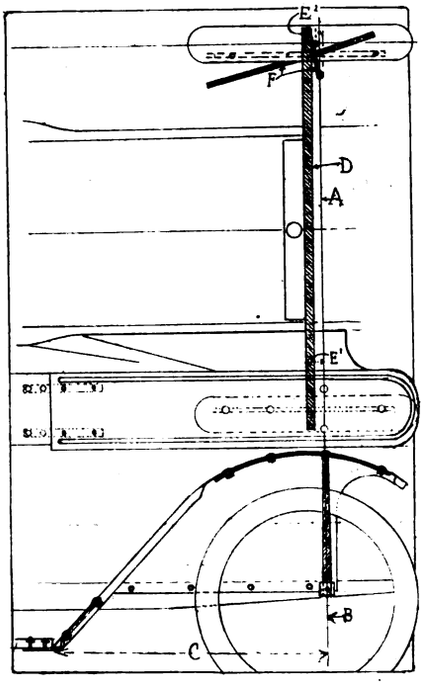


Fig. 5—As the radiator usually is perfectly square with the frame, it serves as a good surface on which to lay a straight-edge

the horizontal section B, Fig. 4, of the fender iron.

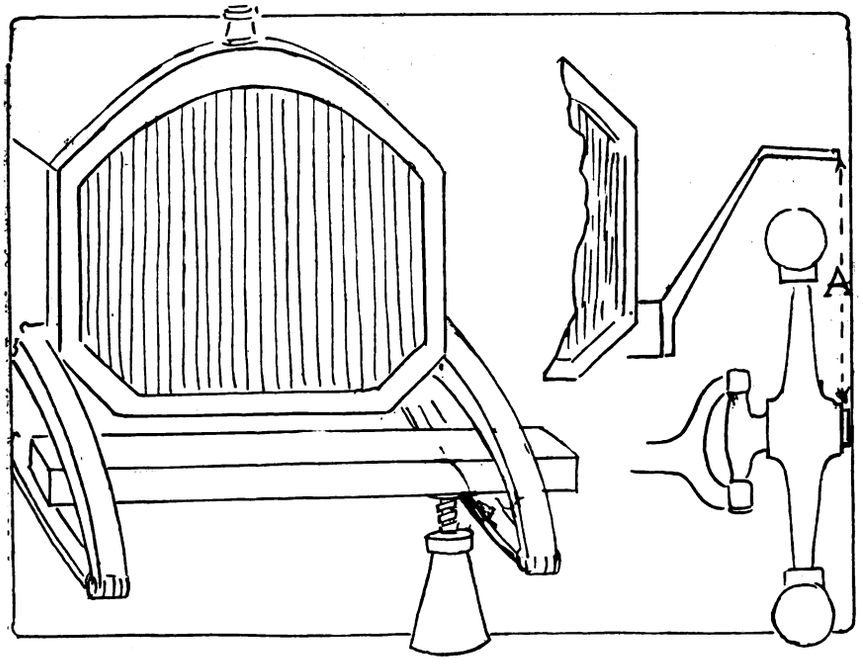


Fig. 6—When measuring from the hub-caps the distance from the axle to the frame must be exactly the same on both sides. A jack may be used to correct any inequality

Assuming the distance just referred to to be 27 inches, we now have determined that in reshaping the damaged fender iron it must, when clamped in place, be made to measure 27 inches from the middle line of the front of the radiator to the center of the nearest bolt hole and at the same time the perpendicular heel A, Fig. 4, must form a right angle with

So far the problem is fairly simple. There are other factors, however, to determine, one of which is the height that the horizontal section B, Fig. 4, of the fender iron should be above the level of the chassis frame or any other dimensions equivalent in effect.

This could be easily ascertained with a straight edge laid across the frame in the event of the motor happening to be removed, as in the case of a complete overhauling job, as in Fig. 7.

Under the conditions we are discussing we must consider other means of obtaining the desired measurements. One is to select some suitably located point on the rim, hub or hub cap of the adjacent wheel, and measure perpendicularly from it to the under side of the top of the uninjured fender C, Fig. 4.

Now can it be seen that the problem has become a little more complicated.

Assuming the measurement from the center of the adjacent hub cap to the under side of the fender to be 24 inches, the following assumed conditions as outlined must be conformed with. When clamped in place the deformed fender iron must be adjusted so as to measure 27 inches from the center of the radiator to the nearest bolt hole, 24 inches perpendicularly from the center of the hub cap to the top of the fender iron, and the horizontal section B, Fig. 4, must be square with the perpendicular heel A, Fig. 4.

It must be pointed out that in using the center of the hub cap as a base of measurement, the latter is only reliable for that purpose after it has been ascertained that the right and left hand spring pads of the front axle are respectively an equal perpendicular distance from the upper surface of the chassis frame. Obviously the equality of these measurements may be affected by unequal strength respectively of the right and left springs. This inequality should be compensated for by raising the side member of the frame which is lower until both side members are an equal height from the axle, using a jack and beam (Fig. 6).

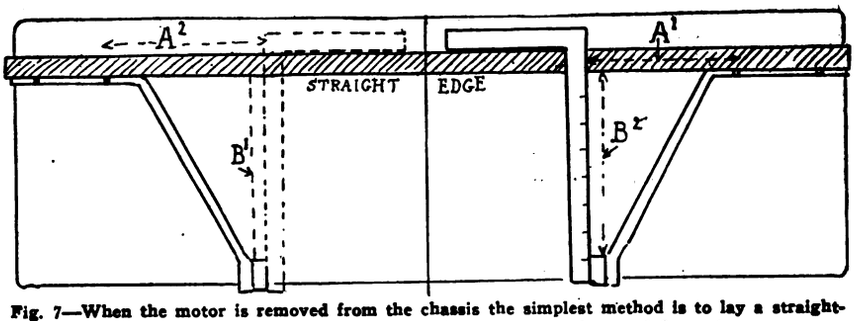


Fig. 7—When the motor is removed from the chassis the simplest method is to lay a straight-edge across the frame and use it with a square to locate deformations

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There yet remains at least one other base of comparison to be determined upon. That is the precise location of a line transverse to the chassis frame and dividing the horizontal section of the uninjured fender iron exactly in the middle. See A, Fig. 5.

A line B, Fig. 5, perpendicular with the transverse line referred to, or, in other words, a plumb line suspended from the center of the extreme outer end of the horizontal transverse section of the fender iron, may be taken as a base and the distance C, Fig. 5, horizontally from it to the forward end of the runningboard may be taken for the purpose of rough comparison in reshaping the deformed fender iron.

It is, however, very much more probable that the radiator is practically square across the frame than that the right and left runningboards are exactly and squarely opposite each other at their forward ends. Therefore a more practical method of locating the transverse line would be to apply a straight edge D, Fig. 5, horizontally across the face of the radiator so as to be able to measure the distance E, Fig. 5, from the straight edge to the center of the transverse or horizontal member of the uninjured fender iron, and in reshaping the injured fender iron making the latter conform with the measurement indicated, as shown at E, Fig. 5.

Assuming for the purpose of clearness that this measurement is 4 inches, E, Fig. 5, we may here sum up the conditions to which the deformed fender iron must conform when properly reshaped and clamped in position in its socket. Referring to Fig. 4, the horizontal section B must be at right angles with the perpendicular heel A. The distance from the center of the radiator, measured horizontally and square across the chassis to the nearest bolt hole D, Fig. 4, must be 27 inches; from the center of the hub cap perpendicularly to the top of the horizontal section must be 24 inches. The distance measured horizontally from the radiator front line to the middle line of the horizontal section of the fender iron must be 4 inches, E Fig. 5. It is hardly necessary to repeat that the dimensions given are merely those assumed for the purpose of explanation to pertain to the uninjured fender iron.

The distortion of the diagonal member of the fender iron as indicated at F, Fig. 5, does not require any confusing measurements in order to indicate when it has been reset or twisted back to its proper alignment.

The Week's Incorporations

Des Moines, Ia.—Successful Motor Sales Co.; capital $25,000.

Cambridge, Md.—Cheraw Motor Car Co.; capital $5,000. Corporators—R. B. May and others.

St. Louis, Mo.—Therma Automobile Stave Co.; capital $10,000. Corporators—J. E. Graves and others.

San Francisco, Cal.—Foard Starter Mfg. Co.; capital $20,000; to manufacture motor cars and supplies.

Indianapolis, Ind.—Indiana Garage Co.; capital $2,000. Corporators—Roger Kenny, H. N. Siefert and Oscar Siefert.

Newark, N. J.—Bonnell Motor Car Co.; capital $50,000. Corporators—Jacob W. Mason, Horace A. Bonnell, Anna M. Bonnell.

Ogden, Utah—American Auto & Transfer Co.; capital $25,000; to operate a motor transit line. Corporators—P. W. Madsden, Ogden, and others.

Boston, Mass.—American Motorists' Protective Association; capital $50,000. Corporators—Frederick L. Keith, Richard R. Snow and Alfred P. Goodell.

Chicago, Ill.—Shasts Machine Co.; capital $21,000; to manufactutre motors, etc. Corporators—Edward J. Carey, Helen Diaz and Charles C. Mull.

Jacksonville, Fla.—Florida Tire Co.; capital $25,000; to deal in motor cars, tires and supplies. Corporators—George Adams, George M. Hopkins and Claude M. Shine, all of Jacksonville.

Newark, N. J.—The Gasolene Protectometer Co.; capital $100,000; to manufacture gasolene and other protectometers. Corporators—W. Reppein, C. A. Alliston and L. Olschewski, all of Newark.

Chicago, Ill.—Boller Insulated Wire Co.; capital $20,000; to manufacture and deal in motors, electrical appliances, machinery, etc. Corporators—Peter Boller, William N. Boller and W. H. Bentley.

Newark, N. J.—S. & S. Starter Co.; capital $40,000; to manufacture starters for motor cars. Corporators—W. M. Golden, Jr., Brooklyn, N. Y.; A. L. Whitmer, Newark; J. W. Shinholser, Bretton Hall, N. Y.

Poughkeepsie, N. Y.—S. L. S. Electric Co.; capital $30,000; to manufacture storage batteries and motor car accessories. Corporators—A. Bolognesi, Highland; A. M. Sherer, Poughkeepsie; J. B. Ball, Milton.

Chicago, Ill.—Auto Pump & Machinery Mfg. Co.; capital $50,000; to manufacture agricultural implements and pumps. Corporators—Robert W. Schweichler, John W. Kaufman and S. C. Brynelsen, 2223 North Kildare avenue.

Muscatine, Ia.—Muscatine Motor Car Co.; capital $25,000; to buy, sell, rent, lease and deal in motor vehicles and operate a garage and repair department. Corporators—F. C. Vetter, J. G. Campbell, C. M. Weber, R. K. Smith, W. F. Bishop and G. A. Chaudoin.

Coming Events

* Indicates sanction by A. A. A.

Sept. 7-14, Indianapolis, Ind.—Automobile show, Indianapolis Automobile Trade Association.

Sept. 9-11, Cleveland, O.—Convention Paving Brick Manufacturers' Association.

Sept. 10-15, Portsmouth, Eng.—Autumn Conference, Institute of Metals.

Sept. 11-12, Peoria, Ill.—Track meet National Implement & Vehicle Show.

Sept. 12, Hamline, Minn.—Minnesota State Agricultural Society's track racemeet.*

Sept. 14, Milwaukee, Wis.—Track racemeet under the auspices of the State Board of Agriculture.

Sept. 15-16, Norfolk, Neb.—Track racemeet under auspices of N. A. Huss.

Sept. 15-Oct. 11, New York City—Commercial Tercentenary Celebration.

Sept. 18-19, Hutchinson, Kan.—Kansas City State Fair track racemeet.

Sept. 18 and 26, Springfield, Ill.—Illinois State Fair Association's track racemeets.

Sept. 26, Memphis, Tenn.—Track meet Tri-State Fair.

Sept. 26, Kalamazoo, Mich.—100-mile track meet Inter-State Fair.*

Sept. 27, Pleaston, Cal.—Track meet Alameda County Fair Association.*

Oct., Philadelphia, Pa.—E. V. A. A. Annual Convention.

Oct. 2, Trenton, N. J.—Track meet Inter-State Fair.

Oct. 2-3, Oklahoma City, Okla.—Track meet Oklahoma State Fair.

Oct. 3, Fresno, Cal.—Track meet Fresno Agricultural Association.*

Oct. 3-10, Cincinnati, O.—Automobile show, Cincinnati Automobile Dealers' Association.

Oct. 4, St. Louis, Mo.—Automobile show, Automobile Manufacturers' & Dealers' Association.

Oct. 7-17, New York, N. Y.—Electric vehicle show, Grand Central Palace.

Oct. 9, Chicago, Ill.—Speedway, Chicago Speedway Association.

Oct. 9-Nov. 2—S. A. E. European Trip.

Oct. 17, Tulsa, Okla.—Track meet, under auspices of J. A. Sloan.

Oct. 17-24, Pittsburgh, Pa.—Automobile show, Auto Dealers' Association, Inc.

Oct. 18-31, Milwaukee, Wis.—Convention, Northwestern Road Congress Auditorium.

Oct. 19, 20, 21, Philadelphia, Pa.—Electric Vehicle Association Convention.

Oct. 19-26, Atlanta, Ga.—American Road Congress of the American Highway Association and the A. A. A.

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National Series "AA" $2375



The National's Fifteenth Year of Success

¶ **Last year many dealers said,** "If we had only known what the **National** had up its sleeve, we would have waited." This year, however, if you regret that you are not a **National** dealer later in the season, you can't blame us.

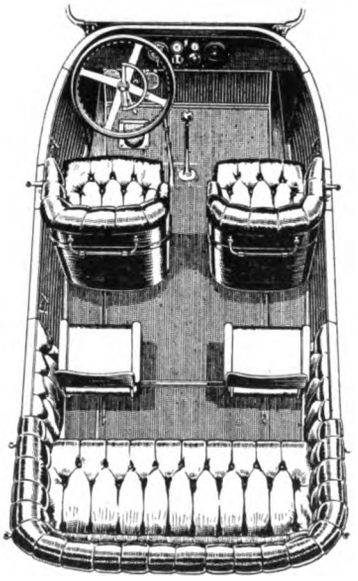
¶ **This year is destined to see** several things happen in the automobile business. The sound reputation that the **National** has been building steadily for the past fourteen successful years is going to serve dealers better this year than ever before. This **National** confidence and prestige is a good banner to get under right now. Bear in mind, that the **National** has not been an "up and down" proposition, but a consistent winner. The **National** has no bad reputation to "live down." It has a clean, convincing record for quality cars of dependable performance. In fact, the season just closed has been the **National's** best. Do you suppose the buying public is ignorant of this? Don't you realize that with the **National** you are not handicapped, but rather, are put on the vantage ground?

¶ **The new National "Aisle-way"** is the last word in style design. It accommodates six passengers, each in a comfortable, convenient seat. The extra seats are easily folded entirely out of the way and completely covered. A passageway between the front seats allows all passengers to easily change seats, also makes front seats veritable armchairs.

¶ **The easiest thing we have** to prove is that this new **National** is an excellent mechanical device. It is also without a superior in style, comfort and convenience.

Six cylinder motor, giving more than sixty horse power and better than fifteen miles per gallon. 132 inch wheelbase. Tires 36x4½

Cantilever Springs--Electric Starter and Lights--Fully equipped. National Sixes made in four types, 2, 4, 5 or 6 passenger bodies.



Six Passenger with "Aisle-way" Front seats and disappearing armchairs.

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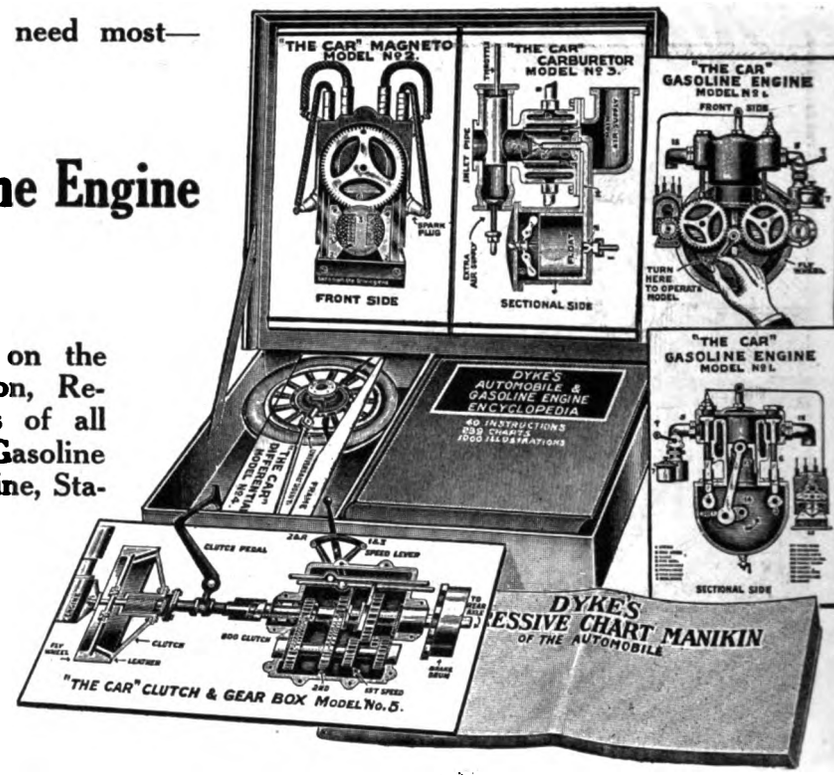
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With these Models you learn more than you could from the real part itself because you see the inside operation—something impossible with the real part.

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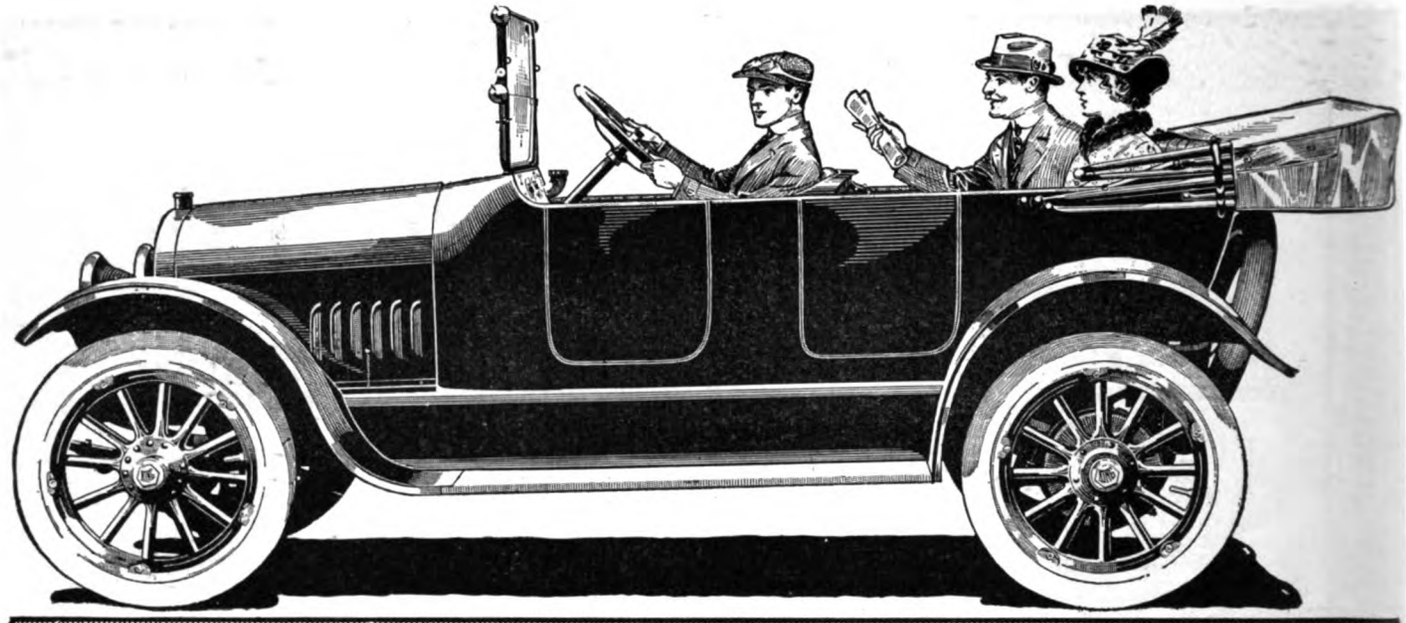
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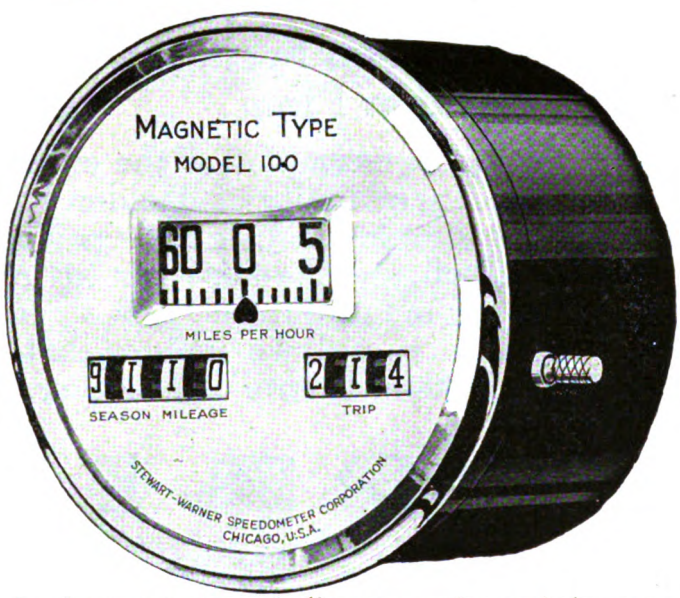
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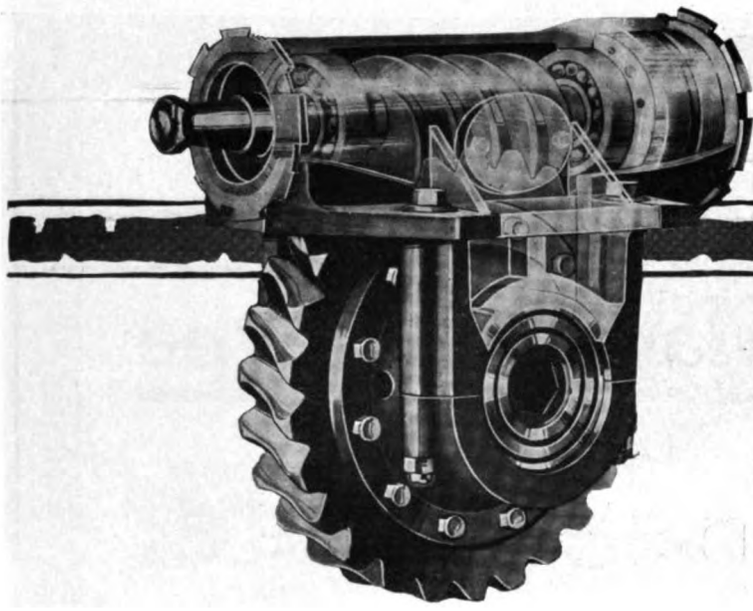
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This is one of the finest examples of the extent to which Sheldon Engineers go in order to insure the dependability of Sheldon Products. Sheldon Engineers are not content to design and manufacture springs giving the truck or pleasure car manufacturer only so much merchandise for his money. With Sheldon Springs the truck or pleasure car manufacturer gets a certain definite performance which in effect is spring service and we believe that this service, while characteristic of the Sheldon organization, is true of no other.

SPRINGS

Let us follow an order for springs through the Sheldon Axle Company's spring plants and see just how far methods employed by other spring manufacturers duplicate Sheldon methods—where the usual practice of spring manufacturers fall short of Sheldon thoroughness and then draw conclusions as to whether Sheldon springs costing a little more, are not least expensive springs to buy.

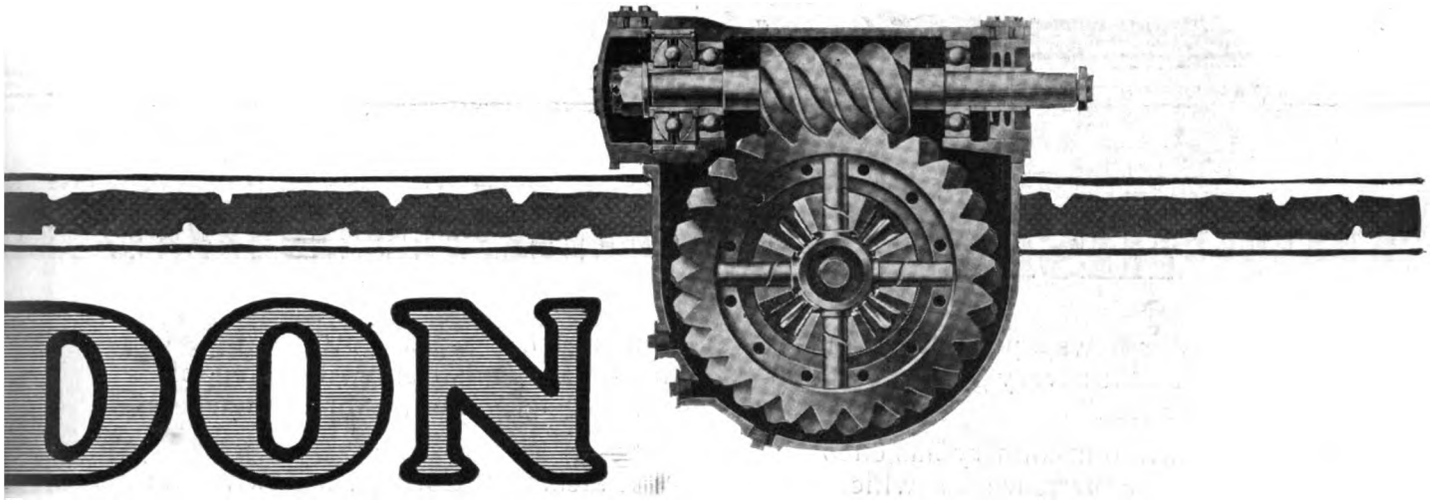
Once the design of a better type of spring has been settled upon in all of its details and the order for a certain quantity of these springs has been accepted, Sheldon Engineers calculate the various elements needed to make up the product and orders are issued accordingly.

The first step in the production of a spring order is the shearing or cutting of the individual plates to lengths set by the designing engineers. After this operation the sheared plates go to the forging department where a number of operations such as punching, slotting, beading, sawing, tapering, pointing, swedging, trimming, and eye bending begin to change the otherwise simple shapes. In the Sheldon Axle Company's Spring Plants each of these operations is performed by a special machine and after each operation each plate is gauged and inspected. Not a particle of guess work is allowed to enter into any of these processes. Each operation follows a predetermined pro-

SHELDON AXLE CO.,

Makers of Springs and Axles for Heavy Duty Service for more than 50 years

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cedure set down by the engineering department. The next stage, when the spring plates reach the fitter's bench, is a critical one. Here the plates are given their proper shape and set, and receive the first of the many processes included by the general term of heat treatment. At this stage Sheldon Spring engineering knowledge gets in its best work. Recording and indicating pyrometers keep the engineers of the metallurgical and chemical departments fully informed as the work proceeds and at this stage approximate tests are made to determine how well the requirements of loading, carrying capacity and the shape of the springs is being met, the results of which are reported to the designing department.

Next comes the tempering and annealing processes. Then comes tests to determine the life of the finished spring.

Here Sheldon Engineers depart from the usual practice of spring makers in that they begin a work, the results of which remove all elements of guess and speculation as to the life or length of service Sheldon Springs will give. Each spring is tested to a capacity considerably in excess of its normal rated capacity plus a generous overload, and in order to check up every phase of their work Sheldon Engineers select at random a certain number of springs from each lot going through, and test them to destruction. The results of these tests are relied upon to give a most definite answer to the question of efficiency.

The destruction tests go still further and confirm Sheldon Engineering practice in that time can give the only correct answer to the question of whether Sheldon Engineering practice is correct or not.

The Sheldon spring plant is equipped with a battery of machines for testing which in a few days can put a spring through a punishment which would take years in actual practice for it to receive, and on these machines especially when "life tests" are being conducted, the lesson of years is learned in as many days.

We believe that in no other spring plant in this country is engineering science applied quite as practically and as exhaustively as at the Sheldon Axle Company. We believe that no other spring maker is capable of giving a spring service equal to ours, and when we say to you that in results and length of service Sheldon Springs are the least expensive of any on the market, we want you to remember this description of Sheldon Spring Efficiency Tests.

Our activities embody the manufacture of front axles and worm gear rear axles for automobiles and motor trucks, as well also brake and radius rod equipment for chain drive rear axles.

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Studebaker

Optimism and Opportunity

As we said in our newspaper advertisement of August 16th, "it is very good these days to be an American."

During this month our country has encountered a trying experience in which our finances, our foreign trade and even our domestic business have been disturbed by the sudden and tremendous wars in our ancestral countries.

Yet, we are coming out of it well.

The President, with his cabinet and the Congress, and the co-operation of bankers and business men called to Washington for the purpose, have promptly and nobly met the emergency by sensible rulings and wise laws, which will largely free our industries and commerce from restraint.

They have arranged for the issuance of emergency currency, through amendment of the Aldrich-Vreeland Law, under which national banks can obtain all the currency needed for legitimate business.

They have organized the Federal Reserve Board which will insure the opening of the twelve new Federal Reserve Banks inside of sixty days, thus giving ample banking facilities for business to every section of our country.

They have amended the ship registry laws so that American capital will buy foreign ships, which together with the large number of ships already owned by Americans, will fly the flag of the United States and furnish ample carrying capacity for our foreign trade.

They have opened the Panama Canal, and thus provided shorter routes for our commerce with South America, Australia and the Far East.

They have under consideration a plan of financing the surplus cotton crop so that our southern planters will be enabled to hold their cotton until normal markets are restored.

The Studebaker Corporation with its 62 years of business experience, its thousands of employes and its millions of capital invested — appreciates the patriotic work that has been done and the opportunities thereby afforded.

Speaking from our experience and immediate forecast of possibilities, we feel cheerful and optimistic over the outlook for profitable business and steady employment of labor, with increasing developments of foreign trade in neutral countries.

America is today the clearing house of the world.

The great nations of the earth are depending upon the integrity of her friendship—the safety and saneness of her diplomacy—the extensiveness of her trade and the soundness of her finance.

It is a time for Americans to show their optimism, their patriotism and their aggressive earnestness.

The foundations of our National prosperity have been laid too deep and too strong to be seriously disturbed, even by so great a catastrophe as the war of all Europe.

We regret deeply and sincerely that the war must be—yet, we are in no wise to blame and are happily far removed from the theater of its activities.

Friendship we feel for all—and toward all we must remain in both thought and action entirely neutral.

Our duty to ourselves and our moral obligation to the rest of the world compel us Americans to be up and doing; to maintain a cheerful and hopeful spirit, to operate our industries and business enterprises, to pay our bills as usual, and to conduct our affairs generally on conservative, but enthusiastic lines.

The Studebaker Corporation
South Bend, Ind., Detroit, Michigan
Manufacturers of Studebaker Motor Cars and Vehicles

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ANNOUNCING
Bock Taper Roller Bearings
in connection with
American Axles

Following our established policy, we have steadfastly refrained from endorsing any roller bearings until the *"American"* standard of perfection was attained.

Bock Taper Roller Bearings have reached this standard; they alone have successfully met our exacting requirements and have proven themselves the only roller bearings worthy to be classed with *"American"* Axles.

Accordingly we are now prepared to furnish Bock Taper Roller Bearings in *"American"* Axles.

Among the many other exclusive advantages of Bock Taper Roller Bearings when used in *"American"* Axles are the following:

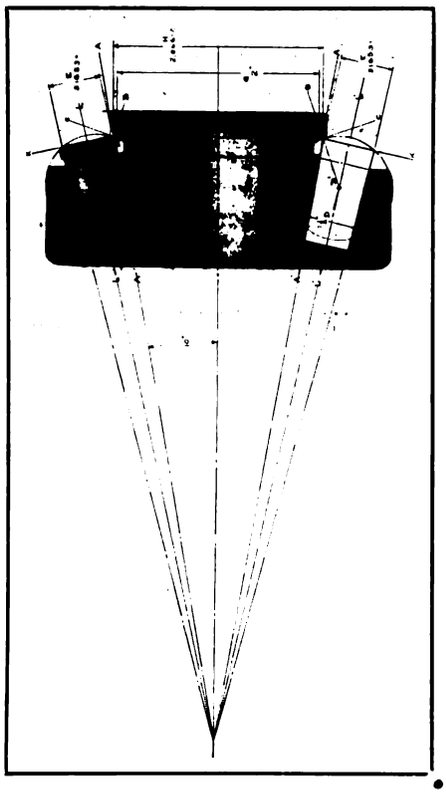
They are the *only* roller bearings that have a full 100% roller action. Consequently there is no slippage on *any* surface, no frictional wear, and no re-adjustment is ever required.

Bock Bearings are made of the finest alloy steels known to the industry for the purpose. All parts are made so accurately as to be *absolutely interchangeable.*

They are far superior in strength and weight-carrying capacity to any other roller bearings made, *and in addition have a Thrust capacity hitherto unapproached by any other roller bearings of whatsoever type.*

They are the only roller bearings which will give satisfactory service under the enormous thrust imposed by worm gears and spiral bevels.

By offering *"American"* Axles with the option of Bock Taper Roller or imported ball bearings, we are able to meet the individual preference of all builders of high grade motor cars.



The American Ball-Bearing Company, Cleveland, Ohio

PIONEER AXLE BUILDERS OF AMERICA LICENSED UNDER THE KARDO COMPANY PATENTS

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EISEMANN

Eisemann products are not affected in any way by war conditions in Europe.

Not only have we on hand ample stock and materials to take care of our regular customers for many months to come—but we are also in position to increase our production greatly should occasion arise.

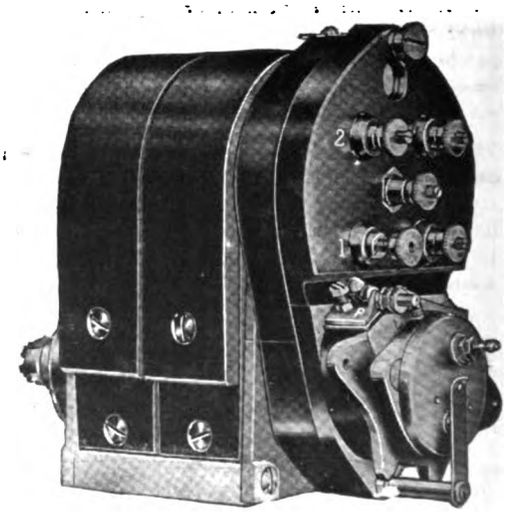
We, therefore, have no hesitancy in offering our assistance to any and all manufacturers who may not be able to have their requirements taken care of elsewhere.

Eisemann Not Affected by War

The Eisemann Magneto Co.

Sales and General Offices
32-33d St., Brooklyn, N. Y.

New York 123 W. 52d St. | Indianapolis, Ind. 415-417 N. Capitol Ave. | Detroit, Mich. 802 Woodward Ave.



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Published by Authority of The Automobile Club of America

OFFICIAL RESULTS

Great Test of Tire Service by the Automobile Club of America Successfully Closes

THE results achieved by the *only make of pneumatic automobile tires ever submitted to the official test of The Automobile Club of America,* conclusively establish the mileage and service qualities of

PENNSYLVANIA Oilproof VACUUM CUP TIRES

One factor stands out in this big test — begun on March 28 and ended on August 18 — which entirely removes it from all previous tests of tires:

The results — completely favorable to the tires — carry a significance and authenticity which never before have figured in any tryout of automobile casings.

This difference lies in the fact that from start to finish the test was conducted by the Club officials themselves — the manufacturers having absolutely no voice in the matter, further than having a representative present — and the results were committed to official record and open publication, regardless of whether the findings should prove favorable or unfavorable to the product.

That official figures on *regular stock casings* might be assured, the A. C. A. officials bought the tires at random and widely scattered points from regular dealers, without consultation with the rubber company. The tires were purchased not only in several large cities, but also in smaller towns, the dealers being kept in ignorance of the purpose to which they were to be put.

The Pennsylvania Rubber Company make a point of explaining that the request for the test under the Club's strict conditions and rules of impartial publicity had in it no sporting element whatever; that their desire was to show by this conclusive, open, and irrevocable method that any buyer of Vacuum Cup Tires—anywhere, at any time—has every assurance of getting maximum mileage and service. It is pointed out, in other words, that no manufacturer could afford to take the slightest degree of chance of failure in such a test, and that absolute confidence beforehand of success was the only possible basis on which he could proceed.

While the manufacturers have on file innumerable unofficial records of much greater mileage for Vacuum Cup Casings, the figures of the test just concluded are far more significant to the tire buyer on account of the absolutely average conditions under which it was run.

The test was conducted in all sorts and conditions of roads and weather.

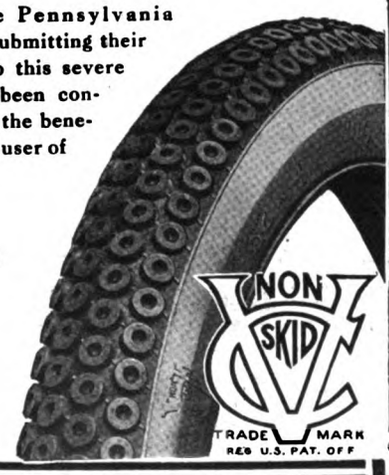
The official figures, as compiled by Herbert Chase, Chief Engineer of The A. C. A., covering this test and briefly giving the history of the nine tires finishing the test, follow:

TIRE	MILES	ELIMINATING CAUSE
1	9,220	Blew out. Never deflated.
2	8,940	Cut by sharp stone at 7,610 miles. Blew out.
3	4,300	Cut by sharp stone at 2,390 miles. Blew out at point of injury.
4	6,540	Cut by sharp stone at 3,350 miles. Blew out at point of injury.
5	2,660	Cut and bruised by sharp stone at 1,040 miles. Blew out at point of injury.
6	5,700	Punctured by screw at 3,290 miles. Worn out.
7	5,820	Cut at 5,690 miles. Blew out at point of injury.
8	7,500	Bruised. Blew out. Never deflated.
9	10,164	Worn out. Never deflated.

Total mileage of nine tires . 60,844

Average mileage for each of nine tires 6,760.4

The confidence of the Pennsylvania Rubber Company in submitting their Vacuum Cup Tires to this severe official test thus has been conclusively justified for the benefit of every buyer and user of automobile tires.



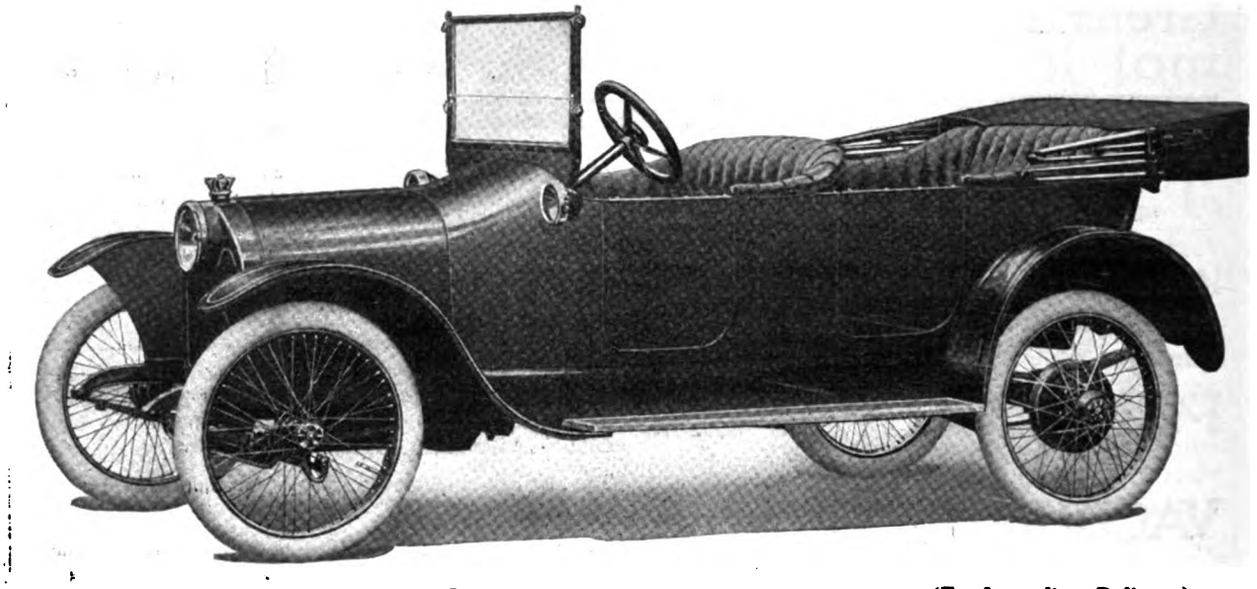
Pennsylvania Rubber Co., Jeannette, Pa.

New York Boston Los Angeles Minneapolis
Chicago Pittsburgh Detroit Omaha
Cleveland San Francisco St. Paul Kansas City, Mo.
Seattle Dallas Atlanta

An independent company with an independent selling policy

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BRISCOE



Announces 1915 Car at $785 (For Immediate Delivery) Completely Equipped

Including electric self-starter, electric light generator, one-man top and boot, speedometer, high-tension magneto, optional wood or wire wheels, full-floating rear axle, etc.

In the new light BRISCOE, you are offered a car not copied from a foreign design, but which in itself is an original foreign masterpiece—the only American-made car that was first designed and built in France; the first car to combine French engineering skill with American production economy.

Benjamin Briscoe has made it possible in this production for the American people to buy in large quantities a car of French design throughout at a price that the people can and will pay. We ask you to compare this car with others selling at $300 or $400 more. Here is a proposition for the dealer that assures him more money than he can make on older cars, and more sales than he can make on lesser-value, small-production cars.

In offering the 1915 BRISCOE to the buying people, we have taken into consideration every automobile value that has been, or is likely to be, offered in the market, not merely this year, but for a number of years to come. It represents no freak of design to which the public must be educated at the expense of the dealer, but a well-balanced, carefully conceived, normal motor car, in which are incorporated the most advanced ideas of European and American designers; it represents a value not possible through any other combination of manufacture.

As a result of its European breeding it is a car of sufficient individuality to afford a basis for convincing sales talk.

As a result of its mechanical construction, you have all that any car has to offer in the "less than $1,000 class," and much more than any car of similar price can possibly muster.

As a result of its complete equipment in every detail, you have what every small-car buyer is seeking within his price-range, and a value that will attract many a serious buyer whom you have figured to be in the larger-car class.

Its agency will individualize those who have part in its sale, and best of all, you'll get the honest, conscientious support of an active working sales organization, and the benefit of the fairest, squarest selling proposition in this broad land.

YOUR OPPORTUNITY IS NOW.

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A NEW BRISCOE THAT STANDS ALONE IN VALUE, BEAUTY AND PRICE AT $785.00 FULLY EQUIPPED

Briscoe Features

- Silent Perfected Electric Starter
- Electric Lighting System
- Ignition for Storage Battery
- Head Light Centered in Radiator
- One-Man Mohair Top
- 107-in. Wheelbase
- Body designed by Carrousserie Internationale, Paris
- Extra Tire Carrier in Rear
- Chrome Vanadium Steel Construction
- Full-floating Rear Axle
- High Tension Magneto
- Electric Horn Button on Steering Post
- Parisienne Curtains
- Light Weight (1700 lbs. equipped)
- Safety First Brakes
- Left Hand Control

PROMPT DELIVERIES

- Gasoline Tank under Cowl
- Carburetor Control on Dash
- Extra Long Springs
- Wire Wheels (wood optional)
- Long Stroke "L" Head Type Motor
- Sight Oil Feed
- Speedometer attached to Transmission
- Excellent Upholstery
- Robe Rail
- Brewster Green Color

There still is territory open for dealers. We have the financial strength, the factory organization, the equipment and the facilities to turn out this Briscoe product in large quantities—with prompt deliveries assured. In fact, a big production is a necessity to the marketing of such a car at such a price.

We want more dealers—the best ones we can find—wherever motor cars are sold. And there is good money for you in the Briscoe proposition—both in volume of sales and in profit per car. Write, wire, or call.

In placing this new Briscoe car on the market, we have opened up a greater field for our dealers. We have at least doubled their possibilities.

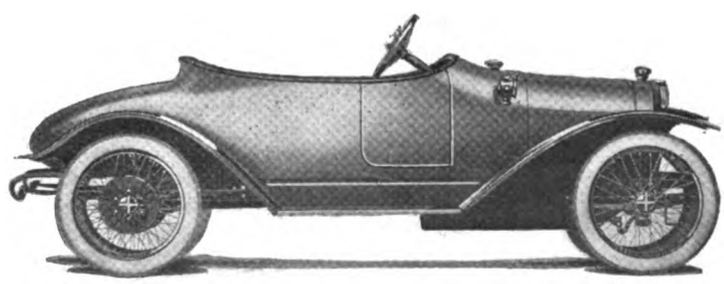
We have established a system whereby loss of time, loss of movement, loss of energy, and loss of money will be practically unknown. We have at one fell swoop jumped into the big-production, low-price class, and perfected our organization to take care of a correspondingly large business. We have accomplished this by producing the most beautiful car of its type on the market—perfect in design and appointments, in maintenance, economy and in its general mechanical construction.

BRISCOE CLOVER-LEAF ROADSTER

This car assuredly is of a new and smart style—characteristically "Briscoe." It has two individual seats, with another behind them—an arrangement that is ideal for one, two or three passengers.

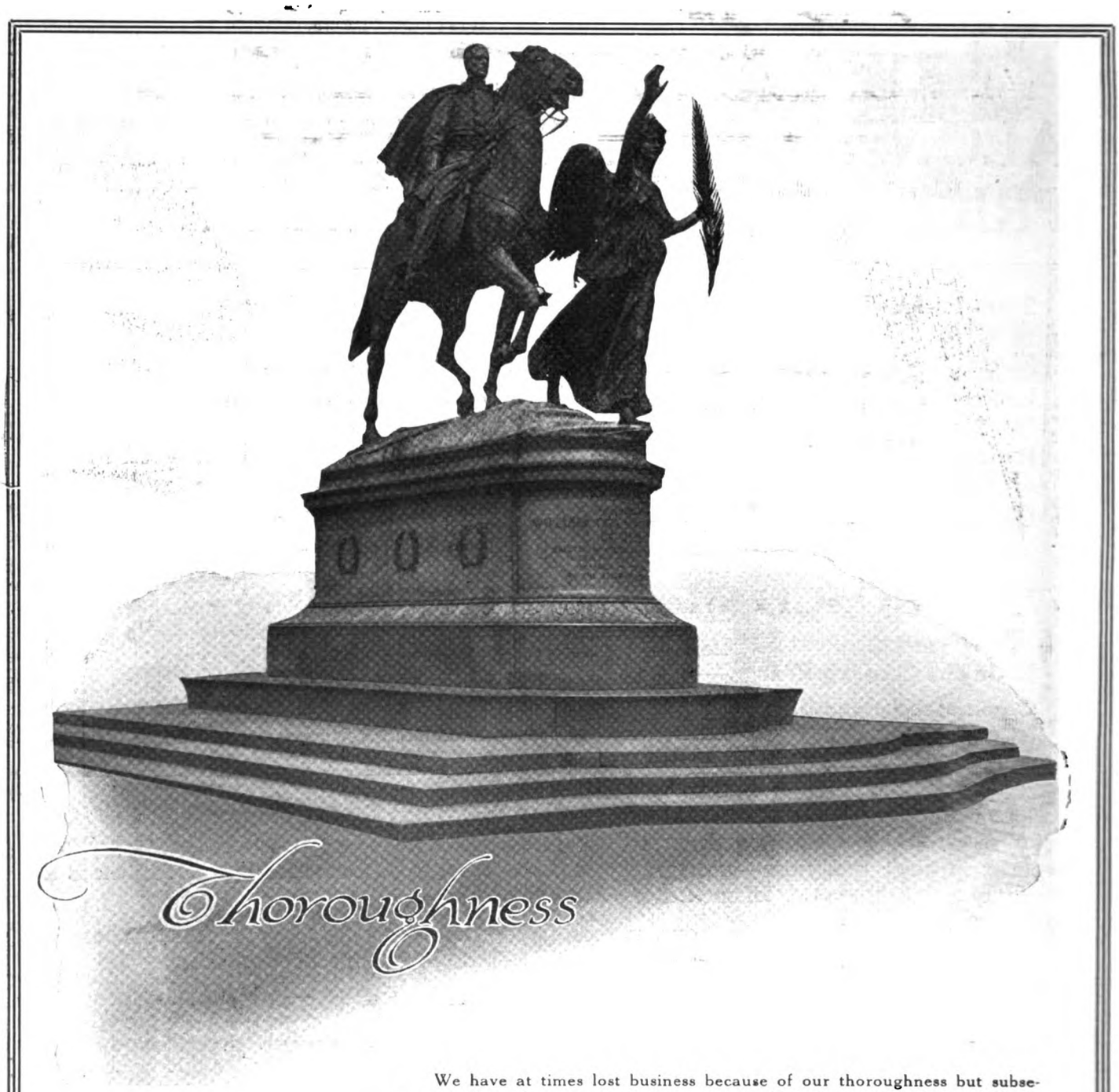
Appointment and finish of especial excellence.

Price $900, Completely Equipped



Briscoe Motor Co., Inc., Jackson, Mich.

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We have at times lost business because of our thoroughness but subsequent evidence has proven that we are not old fashioned, if a little arbitrary. Here is an instance in point. There is about as much sense to the trunnion method of supporting a radiator as there would be in carrying a baby by the ears. This construction places the burden of resisting all of the strain a radiator can be subjected to upon the thin metal sides of its case. In a short time the weight of the radiator multiplied by the jars and jolts of rough going causes the case to pull loose from the tubes or the tubes themselves give way.

This type of construction is entirely at the mercy of the weaving there always is in the side members of a chassis frame. Good engineers know that a radiator which is supported in saddle made of channel steel and bolted to each side frame member is the only correct method of radiator suspension.

In carrying out our policy of thoroughness we will not build radiators for any manufacturer who uses any other method of attachment.

MAYO RADIATOR CO.

NEW HAVEN, CONN.

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BOSCH



Your Insurance

When you specify Bosch you get an ignition system backed by a reputable concern having a remarkably efficient system rendering real service.

SPECIFY BOSCH
and be served and satisfied

BOSCH MAGNETO COMPANY
224 West 46th Street New York
Over 250 Service Stations—All important Centers Covered

BALL BEARING FACTS

Automobile manufacturers who have been using foreign makes of ball bearings need not worry over the war



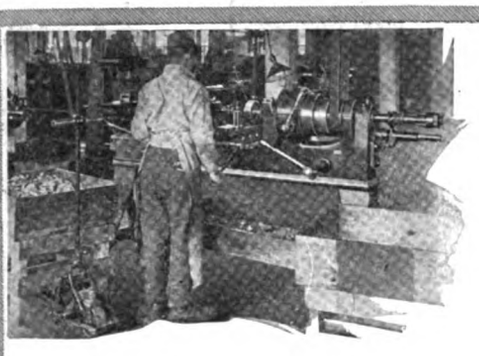
2,000 men, skilled in manufacturing ball bearings, are at your command. Works of the New Departure Manufacturing Company.

The New Departure plant is producing between ten and twelve thousand bearings per day and this is not its maximum capacity. We can guarantee your specified deliveries not only now, but for any length of time in the future. We can also guarantee the quality of New Departure bearings to be the equal of any.

We solicit an opportunity to demonstrate to you our ability to completely meet your requirements now.

The New Departure Manufacturing Company, - Bristol, Connecticut
Western Branch: 1016-17 FORD BUILDING, DETROIT, MICHIGAN

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WHERE MOTION STUDY SAVES TIME

COST must be considered after Zenith quality is assured. Time is money, and to save it cuts the cost for buyer and user. This is the province of motion study.

The Zenith workman pictured above is efficient. On one side within easy reach is the raw material; on the other, the receptacle for the finished operation. Wheel trucks give quick movement. No time lost here — no waste. The Zenith represents full value — one hundred cents on the dollar of quality.

JUST as Zenith methods are efficient so is the final product. With no valves, or cams, or adjustments—no moving parts to possibly give trouble, the Zenith is supreme in its simplicity and precision. Learn more about the Zenith idea. Send for a catalog.

ZENITH CARBURETOR CO. DETROIT, MICH.



"New Ignition for Old"

is a feature of SPLITDORF BRANCH HOUSES. We have an exchange proposition of the greatest interest to every owner of a gasoline motor who would save time and money. You can exchange ANY MAKE of magneto or, in fact, any ignition system throughout with us—low tension, dual, self-contained high tension systems, and coils and transformers—and save real money with our up-to-the-minute equipment.

Write or Call for "Exchange Details"

SPLITDORF ELECTRICAL COMPANY

ATLANTA	10-12 E. Harris St.	LOS ANGELES	1215 S. Hope St.
BOSTON, St. Germain & Mass. Ave.		MINNEAPOLIS	34 S. 8th St.
CHICAGO	64-72 E. 14th St.	NEWARK	290 Halsey St.
CINCINNATI	811 Race St.	NEW YORK	18-20 W. 63d St.
DALLAS	402 S. Ervay St.	PHILADELPHIA,	210-212 N. 13th St.
DAYTON	427 E. 3d St.	SAN FRANCISCO	1028 Geary St.
DETROIT	972 Woodward Ave.	SEATTLE	1628 Broadway
KANSAS CITY	1827 Grand Ave.	TORONTO	463 Yonge St.
LONDON		BUENOS AIRES	



"Two GIANTS of the Great Lakes"

Str. City of Detroit III.
Str. City of Cleveland III.

Operating Between Detroit and Buffalo

The Delights of a Lake Trip

REST after work is necessary to human endurance, and holidays are a wise economy. The Great Lakes of America offer more vacation opportunities than any other source in the country. The steamers of the Detroit and Cleveland Navigation Company, operating to all important ports, are unrivalled in point of elegance, comfort and quality of service—the perfect freedom offered by the saloon and promenade decks, the commodious state rooms, luxurious furnishings and excellence of cuisine make life aboard these floating palaces a solace to the weary mind and body.

Where You Can Go

Daily service is operated between Detroit and Buffalo, Detroit and Cleveland; four trips weekly between Toledo, Detroit and Mackinac Island, the historic summer resort of the North Country; and from June 25 to Sept. 10 a special steamer, two trips weekly, will be in commission between Cleveland and Mackinac Island, stopping only at Detroit every trip. During July and August special daylight trips between Detroit and Cleveland. From June 10 to Sept. 10—daily service between Toledo and Put-In-Bay.

Railroad Tickets Available

Tickets reading via any rail line between Detroit and Buffalo, Detroit and Cleveland will be honored for transportation on D. & C. Line Steamers in either direction. Send 2 cent stamp for illustrated pamphlet and Great Lakes Map. Address L. G. Lewis, G. P. A., Detroit, Mich.

Detroit & Cleveland Navigation Co.

Philip H. McMillan, Pres. A. A. Schantz, Vice-Pres. and Gen. Mgr.
General Offices, Detroit, Mich.
Steamers arrive and depart from Third Avenue Wharf, Detroit.

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GARCO

Asbestos Brake Lining

When the Car Ahead Makes a Quick Stop

You have had the experience of setting your service brake quickly and forcefully and then grappling with your emergency lever in great haste, while the cold chills played tag up and down your spine.

That is when you feel the real satisfaction of GARCO BRAKE LINING. The confidence we place in brake lining is a matter of life or death. And the way we are sometimes deceived by those "glazed" linings in emergency is sad indeed. GARCO BRAKE LINING never fails. Its special weaving, its long fibered asbestos yarn, its heat-resisting metal core, its secret chemical binder, altogether produce a brake lining which has never been surpassed.

And its retail price is about the same as the other kind.

We also manufacture ASBESTOS CLUTCH LINING and a full line of Asbestos Textiles, Asbestos Metallic Sheet Packing, Gaskets, and Valve Stem Packing.

GENERAL ASBESTOS AND RUBBER COMPANY

Main Office and Factories: CHARLESTON, S. C.

Branches:

312 First Avenue, Pittsburgh, Pa. 58 Warren Street, New York, N. Y.

The Dewey Power Tire Pump

Combines maximum service and low cost. It is sold complete—there are no "extras" to buy—and it's *fully guaranteed for only $10.*

NEW MODEL—BETTER—STRONGER

The Dewey with its steel shell and improved construction, continues in the lead and gives most for the money. It pumps chemically pure air only; drawn from outside the pump barrel and not through the motor.

IT ISN'T OILED—IT CAN'T OIL YOUR INNER TUBES

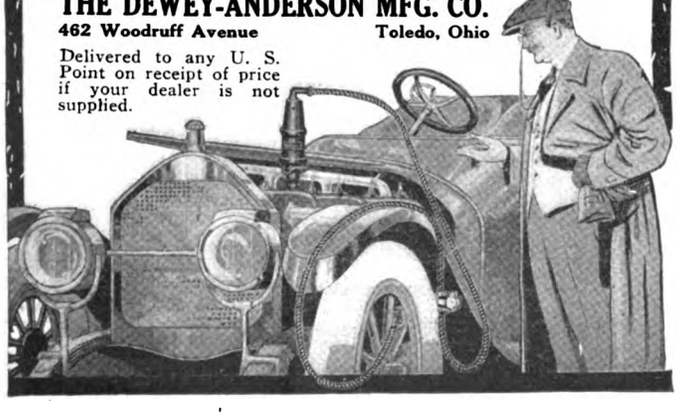
Saves tires—saves hard work—saves time. You can't afford to stick to the old back-breaking pump. It costs more in the long run than a Dewey.

Complete and guaranteed, with high grade Pressure Gauge, 12 ft. of special fabric-protected Hose which has been tested to 1,000 lbs., together with Self-opening Connections and Adapters for any car, only **$10**

THE DEWEY-ANDERSON MFG. CO.

462 Woodruff Avenue Toledo, Ohio

Delivered to any U. S. Point on receipt of price if your dealer is not supplied.





Guarantee

The Corbin-Brown Speedometer is guaranteed for twelve months from date of sale. We will replace any defective parts due to mechanical defects or workmanship, if returned prepaid to our factory subject to our inspection.

When You Purchase A

CORBIN-BROWN SPEEDOMETER

"The Speedometer of Absolute Accuracy"

You do not purchase merely a recorder of speed and mileage—

You purchase the manufacturing knowledge gained from more than half a century of manufacturing experience.

You purchase the ability of mechanics who have grown up with a company, the success of which has been largely the result of quality.

You purchase a principle that science has proven correct and that service has proven sound—***Centrifugal.***

You purchase a mechanical construction free from friction, and everlastingly durable on account of its extreme simplicity.

You purchase a speedometer protected against the inaccuracies resulting from heat, cold and electrical influences—a speedometer that stands for the highest in material, workmanship and design—a speedometer covered by a guarantee of one full year of service.

Visit a Corbin Dealer and investigate this Centrifugal Speedometer today. Catalog on request.

THE CORBIN-SCREW CORPORATION

THE AMERICAN HARDWARE CORPORATION, Successors

NEW BRITAIN, CONN.

BRANCHES: New York Chicago Philadelphia

Makers of Corbin Brakes and Automatic Screw Machine Parts

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Hotel Woodstock

43d Street, Half Block From Times Square New York



A quiet, luxurious hostelry in the midst of New York's rush and gayety. Near the theatres in the evening, and a pivotal point from which to transact your business during the day.

"Comfort Without Extravagance"



MARATHON

Four Thousand Mile Factory Insured Tires

build business for dealers by giving car owners long mileage and entire satisfaction

The Marathon Tire & Rubber Co.

Cuyahoga Falls, Ohio

METZ "Twenty-Two" Roadster



Gearless Transmission

WINNER OF THE GLIDDEN TOUR

$495

Equipped Complete

Fore door body, extra thick tufted upholstery, plate glass rain-vision wind shield, left-hand drive with center control, 4-cylinder 22½ H.P. water-cooled motor, Bosch magneto, Prest-O-Lite tank, extension top, full elliptic springs, artillery wheels, best quality Goodrich clincher tires, 5 lamps, horn, pump, jack, tools. Speed, 50 miles per hour. Beats 'em all at climbing hills. Secure EXCLUSIVE SALE in your territory. Write for terms and catalog "B."

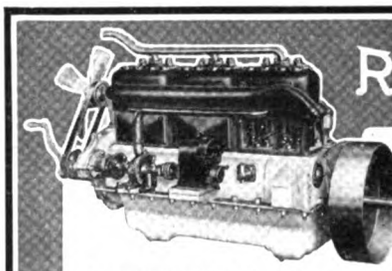
METZ COMPANY - WALTHAM, MASS., U. S. A.

A NEW SERIES AND A NEW PRICE

1915 Model PREMIER $2385

Stream line body, left side drive, center control, unit power plant, three point suspension, electric lights and starter, one man top, clear running boards. New price $400 lower.

PREMIER MOTOR MFG. CO.
INDIANAPOLIS.



THE RUTENBER MOTOR

Eighty Per Cent of the efficiency of any motor car depends on the performance of the motor.

YOU can be certain of ECONOMY in OPERATION and MAINTENANCE, Smooth Running, Super-Quality and Appearance, Long Life, Speed, Endurance and Service when you select a car that carries a RUTENBER MOTOR,—Four or Six.

THE RUTENBER MOTOR CO.
MARION, INDIANA

MARMON

"The Easiest Riding Car In The World"

"41" $3250 132" Wheelbase

"48" $5000 145" Wheelbase

Nordyke & Marmon Company
Indianapolis - (Established 1851) - Indiana
"Over Sixty Years of Successful Manufacturing"



THINK THOUSANDS OF MILES AHEAD, AND YOU WILL BUY

REPUBLIC MILEAGE

PLAIN AND STAGGARD TREAD

TIRES

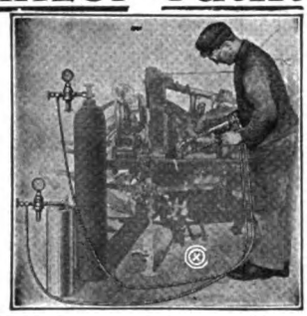
THE REPUBLIC RUBBER CO.
YOUNGSTOWN, OHIO.

REPUBLIC STAGGARD TREAD PAT. SEPT. 15, 22, 1908

BRANCHES AND AGENCIES IN THE PRINCIPAL CITIES

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Cox Combination Welder and Decarbonizer Outfit



Save time, money and make extra **profit doing** your own welding. **Outfit complete** and simple; **repairs worn** and broken parts good **as new. Welds** iron, steel, brass, **bronze and** aluminum. Safe and **sure. Quick** repair work. Includes **oxygen carbon** remover feature. **Double work,** double profits. Pays **for** itself in short time. **Complete** instructions furnished.

Write for Catalog--NOW

COX BRASS MANUFACTURING CO., Albany, N. Y.

NEW YORK CITY 1777 Broadway | BOSTON, MASS. 869 Boylston St. | CHICAGO, ILL. 2537 Michigan Ave. | DETROIT, MICH. 870 Woodward Ave. | SAN FRANCISCO, CAL. 1216 Van Ness Ave.



PROTECT YOUR EYES

The two color Dimmer Goggles give absolute protection to the eyes. At night—against the blinding glare of approaching headlights—by day—against strong and dazzling sunlight.

The two color Dimmer Goggle is made from pure **Pyralin,** commonly known as Parisian Ivory. This substance has none of the objectionable features of Celluloid, Isinglass, Mica or Glass. It is practically unbreakable. The upper half is green and the lower amber, white or orange, as preferred. The normal vision is through the lower half and by slightly lowering the head or lifting the eyes the glare of the sun or approaching headlights is completely subdued. In fact, you can look straight at the sun or headlights with perfect comfort.

FULL VISION provided. No visible dividing line to interfere with sight. No connection over nose, as with ordinary goggles to cause "crossing" of eyes and subsequent headache. GUARANTEED to fit perfectly. Can be worn over spectacles.

TWO COLOR **Dimmer Goggle**

Should be Worn by Both Driver and Passengers

They are washable, sanitary and are bound in solid rubber, making them cool and comfortable to wear. Fitted with self-adjusting head band and hair pins for ladies.

We also make an invisible eye protecting goggle in pure white pyralin for use by motorists on dull days. These invisible goggles are also of great value to pedestrians on windy, blustery days as they absolutely protect the eyes from dust and dirt and from cold and injury by the sharp cutting winds of fall and winter.

Special Dealers' Offer — We want Automobile and Accessory Dealers to write us for special prices. Dimmer Goggles will be widely advertised, so get in line to take care of the demand. The Dimmer Goggle sells on sight and nets you a liberal profit. Retail selling price 75 cents. Write us right now for Special Dealers' Offer.

DIMMER GOGGLE CO., 516 FISHRUPP ST., WHITING, IND.

HY-RLEX-ROL TRADE MARK REGISTERED U.S. PATENT OFFICE

Hyatt Quiet Bearings

HYATT SERVICE STATIONS

1120 Michigan Ave., Chicago, Ill.
756 Woodward Ave., Detroit, Mich.
169 Massachusetts Ave., Boston, Mass.
Fourth and Middlesex Sts., Harrison (Newark), N. J.
1210 South Figueroa St., Los Angeles, Cal.

SERVICE AGENTS

Pence Automobile Co., 800 Hennepin Ave., Minneapolis, Minn.
Broom & Wade, High Wycombe, England.

Hyatt Quiet Bearings are used in the majority of American made Automobiles

HYATT ROLLER BEARING CO.
DETROIT, CHICAGO
NEWARK, N.J.

You can't beat Diamond mileage—for distance or low cost. Then equip with

Diamond
Squeegee Tread Tires

The squeegee tread insures non-skid certainty—and Diamond quality insures Diamond service at every revolution of the wheel.

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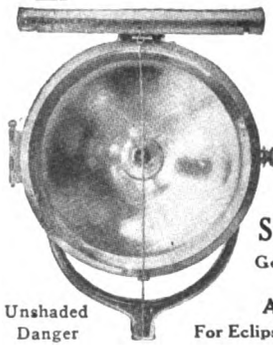
"Safety First" Headlight Shades

for instantly toning down the blinding glare of your headlights into a powerful, but non-blinding illumination, are indispensable in night driving.

A simple, well constructed appliance consisting of a roll-curtain of translucent fabric, is contained in a neat cylindrical case which is fastened to the top of the headlights. Pressing a pedal draws down both shades and locks them in place; a simple releasing movement allows them to fly back again out of the way.

Motorists find "SAFETY FIRST" Headlight Shades an essential permanent equipment, easily attached to any make car equipped with gas or electricity. Cannot rattle, are rain and mud proof. $10.00 PER PAIR installed.

Mr. Dealer, you can sell 75% of car owners the "SAFETY FIRST" Shades if you will but demonstrate a few times.



Unshaded Danger

Good inducements to dealers. Write for circulars and terms for demonstrating outfit.

SMITH BROS.
General Sales Agents
Box M. W.
AUBURN, N. Y.
For Eclipse Manufacturing Company



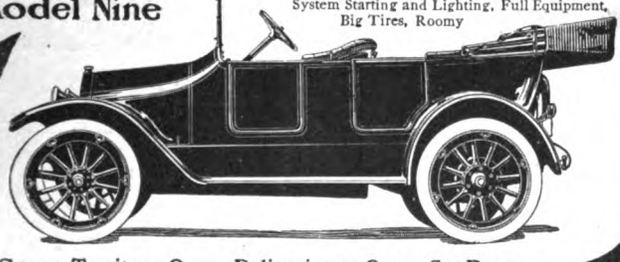
Safety Shaded

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Model Nine

Driven by "Wheel and Disk"—with 12 years of success behind it. New Streamline Body. Delco Electric System Starting and Lighting. Full Equipment. Big Tires, Roomy



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Half a Million in Use Tells a Story of Universal Satisfaction

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(673)

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More Flexibility
More Economy
More Silence

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Model HA (Touring or Roadster)	$1050
With complete equipment and electric system.	
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CONSISTENT

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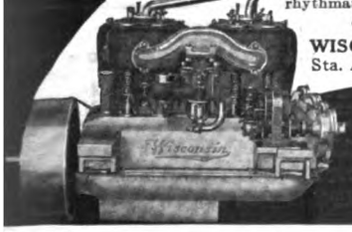
After all it is the motor that keeps on going that makes automobiles and motor trucks a success. Wisconsin Motors, both the auto type and the truck type, have proven that they are

ABSOLUTELY CONSISTENT

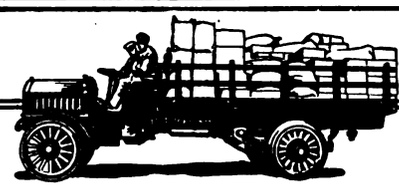
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For Second Hand Cars, Surplus Parts, Accessories, Machinery & all other Special Announcements of a Similar Character

SEEKING a situation as motor car driver; 5 years' experience in England; do all running repairs; private place; excellent reference; country preferred. H. C. JONES, Wakefield, Kan.

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This information is to be delivered to the Superintendent of the Department of Street Cleaning as soon as possible, at his office, Room No. 9, Basement, City Hall.

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Second edition. A manual on care, repair and operation. Makes you master and mechanic of Ford Model T. Circular on request or sent postpaid, $1.00.
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THE WARNING SIGNAL DE LUXE

SAFETY FIRST SPARTON

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Ask Lewis about valves

We make valves exclusively—special heat-treated valves that "stand up" in service. Don't take chances. For anything in valves, write

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Cellular—Honeycomb—Spiral Tube Cooling Systems for Pleasure Cars — Trucks — Tractors.

Write to LONG MANUFACTURING COMPANY, Detroit, U. S. A.

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Hess Axles Make a Good Car
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Official Road Race Champion

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Stutz Motor Car Company, Indianapolis

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HAYES MANUFACTURING COMPANY

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STOP! Losing money on Second-Hand Cars. Get the "Used Car Central Market Report," a book which shows you what cars are selling for in Chicago—the "Great Central Market." This service will save you, on a single deal, more than its cost for an entire year.

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Full Wood Panel
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The American valve facing and seating tools are instantly adjustable to any motorcycle, automobile or truck; perfect and complete work in thirty minutes; guaranteed; price $10; complete set of two tools; C. O. D. express or parcel post; privilege of examination. THE AMERICAN VALVE TOOL CO., Stamford, Conn.

THESE columns offer you an opportunity to appeal to an audience of 8,000 readers whose merchandising taste is being cultivated weekly to the highest degree by our articles on "Wide Awake Merchandising."

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The BROWN Oil-Box

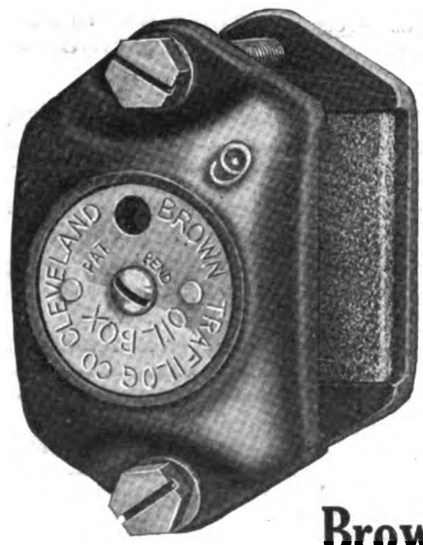
HERE is a new accessory for which there is the greatest need and which has little or no competition.

The automobile owner realizes the need of lubrication between the leaves of his springs to make his car ride easier, relieve the strain on tires and eliminate breakage.

When the Brown Oil-Box is shown him he buys a set. The ease of installation, with an ordinary screw-driver, the freedom from future trouble and the price appeal to him.

A set of four for a Ford Car sells for $4, other cars require a set of ten at $10 the set—and they sell rapidly at the price.

We have an interesting and profitable proposition to make to a limited number of dealers. We would like to hear from those dealers who want to make money.



Our Dealer Proposition

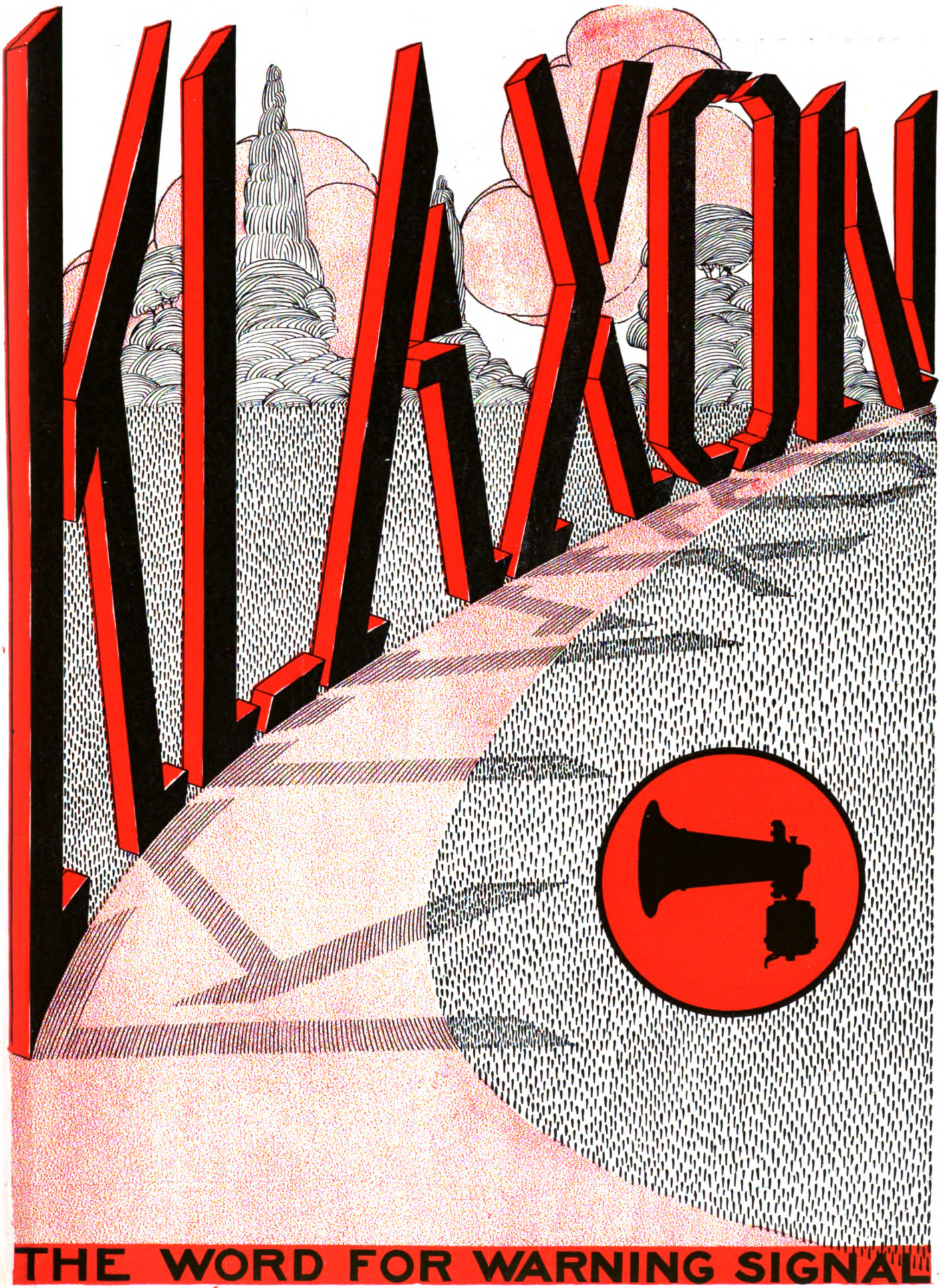
Has been quickly accepted by a large number of live men in all parts of the country. Our Los Angeles representative has contracted for twelve hundred boxes a month. This is evidence of the big demand. We're selling a lot of Oil-Boxes by mail right now in cities where we have no dealers.

Write us today for our proposition.



Brown Trafilog Company
6536 Carnegie Avenue
Cleveland, Ohio

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This advertisement planned, written and set up entirely in the Klaxon Factory. Type composition by the Klaxon Press with "Klaxon" type especially designed by Goudy

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In Ford Sizes

FISK NON-SKID RED TOP TIRE

With All The Regular Fisk Quality

A New and Unusually Attractive Tire
At a New and Unusually Attractive Price

A TIRE that is to be confined to small sizes, meaning a saving in equipment expense. A tire available to the hundreds of thousands of small car owners, resulting in a volume of business which makes for economy in overhead and sales expense and effects a saving which enables us to offer an unusually good price to the user.

THIS FISK NON-SKID with its distinctive *Red Tread and White Side Wall,* is made only in 30 x 3 inch and 30 x 3½ inch sizes. It is a positive Non-Skid and Traction tire with its sturdy buttons and side corrugation, designed for use not only on wet pavements, but also on muddy roads where the ordinary fancy tread tire is more or less ineffective.

DEALERS: A look at this New Fisk Tire is enough to prove it to be a seller from start to finish. The results of our first full page "Red Top" announcement in the Saturday Evening Post on August 22nd, indicate that it will be a world beater for Dealers. Have you anticipated the demand? Have you ordered all the "Red Top" tires you will need? To those looking for Dealer connections the Fisk Line fairly bristles with possibilities. Are you interested? Then write at once to Dept. 23.



THE FISK RUBBER COMPANY

Factory and Home Office **Chicopee Falls, Mass.**

Fisk Branches in 43 Principal Cities

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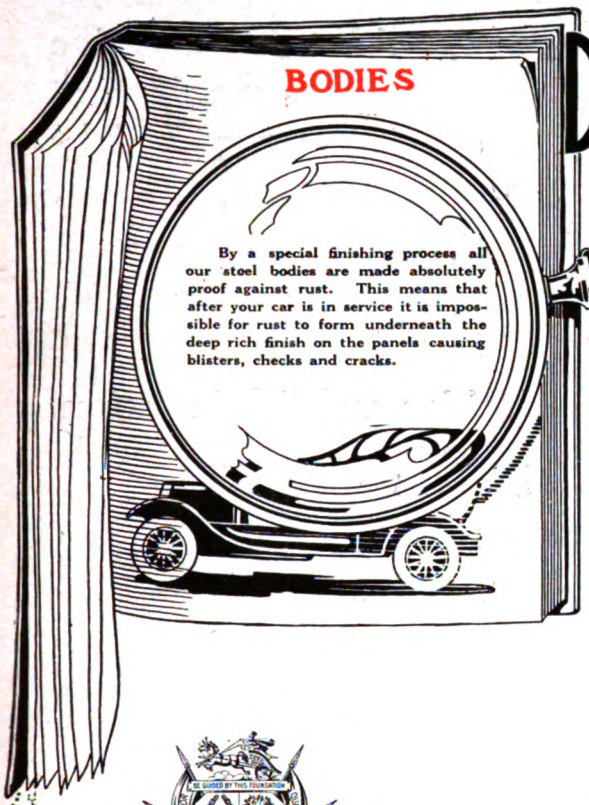
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A Trade Paper Giving the World's Motor News

Volume XL
No. 12

New York, September 16, 1914

Ten cents a copy
Two dollars a year



Does Your Catalog contain this Point in favor of Your Car?

Success in motor car manufacturing and selling depends today, more than ever before, on the actual value built into the car.

The advantage of a metal body that is absolutely proof against rust makes a strong appeal to both experienced motorists and those about to purchase their first car.

Through the use of Lionoil, this feature can be added to ***your*** car without increasing your present finishing cost. Details are yours for the asking from our advisory department.

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(INCORPORATED)
World's Largest Varnish Makers

ESTABLISHED 1858

FACTORIES: Detroit, Mich. Walkerville, Ont. San Francisco, Cal.

Branches in Principal Cities of the World

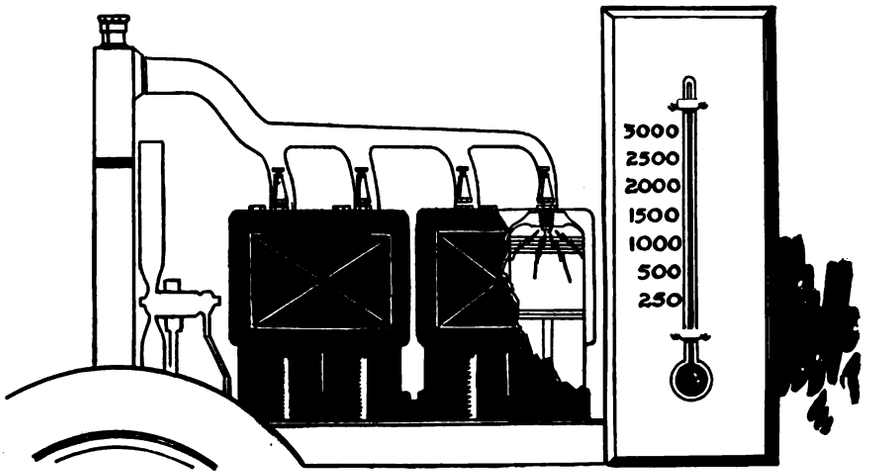
TRADE LIONOIL MARK

The Perfect Rust Preventative

Published Weekly by the Motor World Publishing Company, 231-241 West 39th St., New York

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3000° in the shade—



That is the estimated temperature in the cylinder at the moment of firing.

***All* this excessive heat cannot be kept in nor quickly cooled.**

Under the hood is a hot place

which is bad for the rubber insulation in the ignition and lighting wires.

Heat, next to oil, is rubber's worst enemy on an automobile or motor boat.
Its effect is to dry out or *over*-vulcanize, making the rubber brittle and liable to crack when bent.
Every crack is an open door for "leaks" to the ignition current having a pressure of about 20000 volts.
Remember this the next time your engine shows lack of power.

The injurious effect of heat is successfully overcome in

Packard

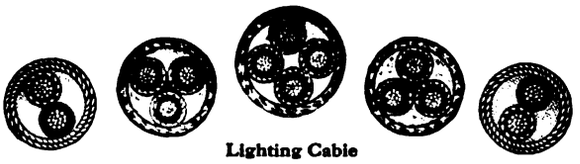
PROTECTED CABLE

The "Protection" is built into the cable and consists of a flexible enamel which is applied to each conductor and to the completed cable until the braids can "take up" no more — the rubber being thus **sealed in and protected,** not by braids only, but by the flexible, oil-proof and heat-resisting covering of enamel.

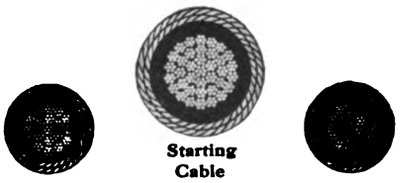
The enamel also serves as an additional insulation.



Combination High Tension Cable



Lighting Cable



Starting Cable

We make twenty-seven styles and sizes for Ignition, Starting and Lighting—can make delivery on same day order is received.

Complete assemblies for automobiles or motor boats made on special order, also cables of any specified construction.

Write for descriptive folder showing standard products in actual sizes and natural colors.

(101)

THE PACKARD ELECTRIC CO., Dept. D., Warren, Ohio

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"By this sign ye shall know it"

CHEVROLET

A WINNER

At Brighton Beach, September 5th:

Fifty mile free-for-all, the Grand Prix Mercedes (the car that made the double win at Elgin without a single stop) driven by Ralph De Palma, first; CHEVROLET, LeCain, second; Marquette, third; CHEVROLET, fourth. CHEVROLET thirteen seconds slower than Mercedes. CHEVROLET led in forty-fifth mile.

Free-for-all ten mile handicap, Peugeot, first; CHEVROLET, second; Mercedes, third.

At Brighton Beach, Labor Day, September 7th:

Free-for-all ten mile handicap, CHEVROLET, first; Mercedes, DePalma, second; Mercer, third; Stutz, fourth.

One hundred mile free-for-all, entries, Mercedes, Stutz, Marquette, Mercer Special, Irwin Special, Mercer and CHEVROLET. Mercedes, first; Irwin Special, second; CHEVROLET, third. CHEVROLET held second place from sixty-second to ninety-fourth mile.

At Rockford, Ill., Labor Day, September 7th:

On one mile dirt track, CHEVROLET "Royal Mail" roadster, fully equipped, won three out of four events at Motor Club meet against stripped and racing cars, including Overland, Paige-Detroit, Apperson, Marion and Ford. One ten mile and two five mile events.

At Milwaukee, Wis., September, 12th:

CHEVROLET "ROYAL MAIL" roadster finished the three day 500 mile Wisconsin Reliability Run with perfect road score and with average of 27.5 miles per gallon, defeating Franklin, Jeffery, Studebaker, Buick, and other cars widely advertised for economical gasoline consumption.

A cordial invitation is extended to all to visit this factory in the heart of New York City, four blocks from Broadway, where the *"Royal Mail" Roadster at $750.00* and *"Baby Grand" Touring Car at $875.00* are built.

CHEVROLET MOTOR CO.

OF NEW YORK, INC.
57th Street and 11th Avenue
NEW YORK CITY

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Buy Fewer Inner Tubes

Use

Firestone

Red Tubes

-They Last-



Firestone Tire and Rubber Co.
Akron Ohio.

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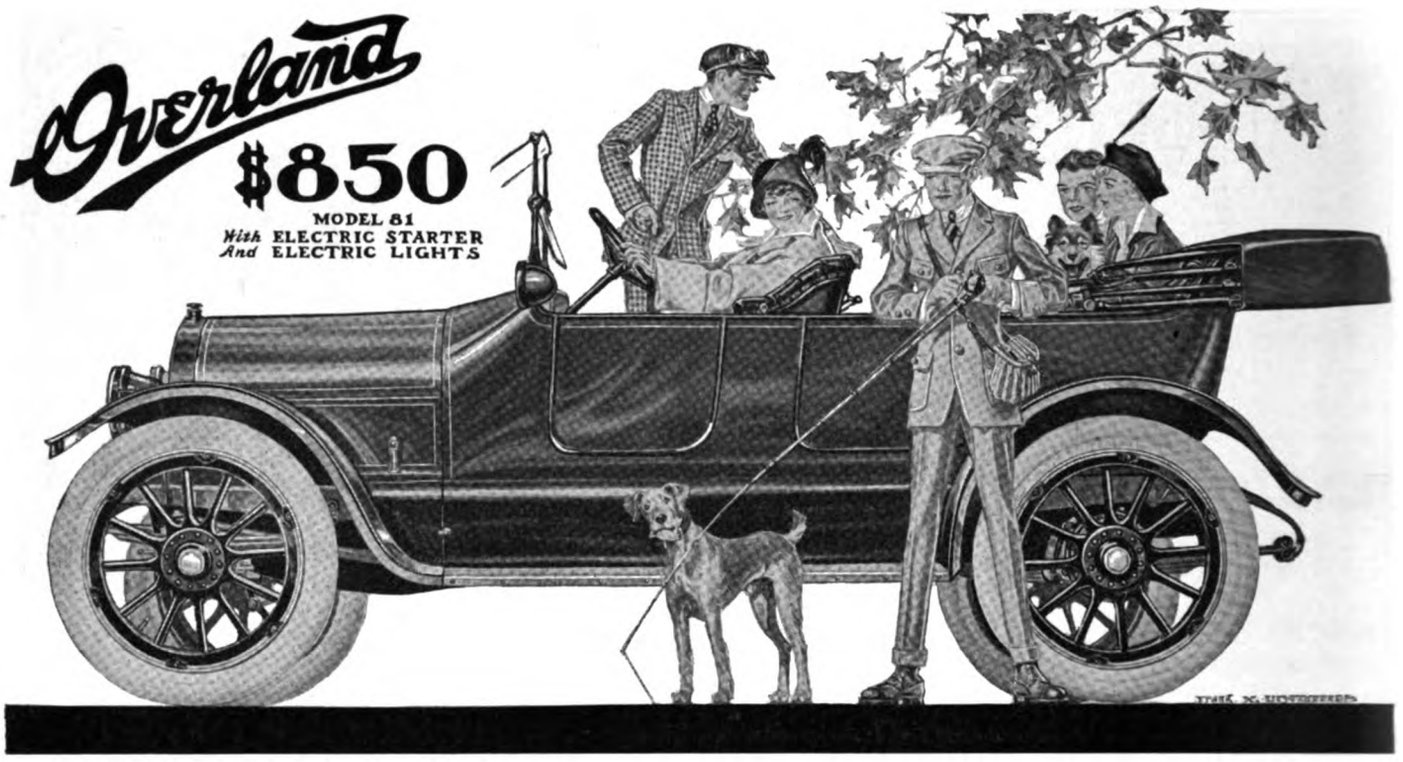
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MOTOR WORLD

Vol. XL New York, U. S. A., Wednesday, September 16, 1914 No. 12

TRUCK CONVENTION PLANS PRACTICALLY COMPLETE

Discussion of Dealers' Problems To Be Prominent Feature of Four-Day Meeting—Papers That Will Be Read

The motor truck convention, to be held in Detroit on October 7, 8, 9 and 10, gives promise of being one of the greatest motor truck conventions ever held in America. The work of drafting the program for the four days was practically completed last week, but as yet definite announcements giving the names of the people who will present the various papers cannot be made until acceptances have been received.

The program for the four days is particularly exhaustive and has been drafted with the object of taking up questions of direct value to the truck maker, the truck dealer and the truck owner. These questions are on pertinent rather than academic subjects.

Wednesday afternoon the opening of the convention will be given over exclusively to manufacturers, when subjects of direct value to them will be handled.

Thursday will have forenoon and afternoon sessions on subjects which concern both manufacturers and dealers.

Friday will be dealers' day and will be largely given over to questions of truck guarantees and service that manufacturers and dealers should give. These questions will be handled by representatives of the manufacturers and also by dealers. Many dealers have been invited to come specially prepared to participate in the discussion.

Saturday forenoon will be cleanup session on subjects that have not been completed during the three previous days. There will also be a discussion of pertinent business subjects, such as the necessity for dealers' organizations, the desirability of some form of motor truck exhibitions, and other questions that may be brought up.

Although the exact order of the program cannot be given, many of the subjects are now definitely decided upon.

"The Trading Evil" will be handled by one or two makers and several dealers. This is considered one of the most pertinent topics. Dealers have been allowing too liberally on used trucks. The

(Continued on page 7)

Douglas Leaves Johns-Manville

S. A. Douglas has resigned from the H. W. Johns-Manville Co. and with H. W. Kane will act as factory distributer for the following concerns: Simmons Mfg. Co., Doehler Die Casting Co., Standard Rolling Mills, Wisconsin Aluminum Foundry Co., and the Pontiac Drop Forgings Co., with sales offices in Detroit and Chicago.

Goodyear Tire & Rubber Dividend

The Goodyear Tire & Rubber Co. has declared the usual quarterly dividend of 1¾ per cent on its preferred stock, payable October 1. The books close September 19.

Reuschaw Made Reo Director

R. C. Reuschaw, general sales manager of the Reo Motor Car Co., Lansing, Mich., was elected to the board of directors of the company at a meeting of the stockholders held September 1. At the same time a dividend of 12½ per cent was declared in addition to the regularly quarterly dividend of 2½ per cent payable October 1.

Coffin on N. A. C. C. Patent Committee

Howard Coffin, vice-president of the Hudson Motor Car Co., Detroit, Mich., has been appointed a member of the Patents Committee of the National Automobile Chamber of Commerce.

VARYING PRICES RULE IN NATIONAL GASOLENE FIELD

Seldom the Same — Filling Stations Rapidly Cutting Into the Garage Trade and May Eventually Check It

The price of gasolene is a strange and not always understandable figure. A year ago it was climbing because of "supply and demand." At least this was the explanation advanced by the oil companies. Since January 1 the price has been coming down as fast or faster than it went up, but now seems to have reached a stopping point.

Also the price of gasolene is seldom the same in two different cities or sections of the country. In Austin, Tex., and Atlanta, Ga., the garagemen can buy it from the oil companies for 8 cents a gallon, while in Salt Lake City the price to the garagemen is 18 cents.

In some cities the oil companies profess to sell but one grade and do not guarantee any test figure, while in other towns, such as Milwaukee, four different grades are sold at four different prices. Wars between gasolene companies have much to do with the price, it often being forced to a low figure.

Since the first of the present year the price everywhere has undergone marked changes, and Motor World in this story presents the first national review of the gasolene situation in its connection with the garage business. The vital points, of course, are what the garageman has to pay for it and what he gets for it. Throughout the country these figures vary widely, but there is one tendency of prime importance and which may in the end force the garageman out of the gasolene retailing field. That is the gasolene retailing roadside station.

In some cities these are being estab-

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lished by the big oil companies themselves and the garagemen are fast feeling the effects in the loss of gasolene trade. They cannot meet the low-priced competition and in Milwaukee, for instance, the garage gasolene trade is on the wane.

Others of these small stations are maintained by companies whose sole business is the selling of gasolene. Costs are figured to the minimum and the retail price is low. Some of these stations are mere automatic slot pumps and there are even such things as gasolene peddlers with tank wagons.

The garageman cannot afford to sell any but a good grade of gasolene, and he must get a fair margin of profit; garagemen declare that some of the corner gasolene vendors are not over-particular as to the grade of fuel they sell and that the reputable garage cannot meet the existing conditions if the car owner is content to take chances and buy at any roadside station.

(Continued on page 34)

Detroit Office For Lovell-McConnell

A permanent office has been opened in Detroit in rooms 1317-1318 Dime Bank building, by the Lovell-McConnell Mfg. Co., Newark, N. J., manufacturers of the Klaxon and Klaxonet warning signals. Charles Johnson, special representative from the home offices, has located permanently in Detroit and is in charge of the office.

Pope Receiver Has $152,000

Colonel George Pope, receiver of the Pope Mfg. Co., in his report for August, states that he had $160,914.22 on hand July 31, and his cash receipts during August were $67,967.81, giving him a total of $228,882.03. The cash disbursements were $76,967.61, leaving a balance on hand of $151,914.42.

Illinois Garagemen Gather Oct. 23.

The Garage Owners' Association of Illinois, which has its headquarters in Peoria, will hold its fourth quarterly convention October 23, 24 and 25. The association has a membership of 1,200 garages in the State of Illinois and it is expected that there will be a large attendance.

Caldwell Scripps-Booth Supervisor.

A. D. Caldwell, formerly with the sales organizations of the Franklin, Hupp and Peerless motor car manufacturers, has joined the ranks of the Scripps-Booth Co., in the capacity of traveling supervisor of territory.

CHAMBER PROTESTS 9-FOOT HEIGHT FOR FREIGHT CARS

Advocates Height of 10 Feet and Lengths from 40 to 50 feet—Lower Minimum on Cyclecars Formally Refused

As a result of the work of the traffic department of the National Automobile Chamber of Commerce, the American Railway Association has now under consideration a change in the plan for special box car dimensions that will make more convenient the shipment of motor cars.

The Railway Association has been considering that special equipment should not exceed inside dimensions of 40 feet 6 inches length, 8 feet 6 inches in width, and 9 feet in height. As the motor car industry requires 40-foot and 50-foot cars, 10 feet high inside, for a large proportion of its shipments, a formal protest was sent to the Railway Association and is now being considered.

The Chamber will have a representative in attendance at Chicago today, when the Western Classification Committee holds a hearing on a number of matters pertaining to the classification of automobiles and parts.

The Chamber has been notified that the Official Classification Committee has refused the application of cycle car manufacturers for a lower minimum on machines of that type than applied on other automobiles.

In its conference with the Official Classification Committee the Traffic Department has arranged that instead of enforcing the rules that bodies for freight vehicles be boxed for shipment, there will be a modification so that after October 1st bodies for platform, stake or dump trucks or wagons not lettered may be shipped without being boxed or crated.

The new Traffic Committee of the N. A. C. C. consists of William E. Metzger, chairman; E. R. Benson and R. E. Olds.

Gasolene Escapes Revenue Tax

Gasolene is not to be taxed after all. As originally proposed in the measure introduced to increase the internal revenue which has dropped off because of disrupted import business, gasolene was to have been taxed, but this provision now has been removed in favor of one which places a tax of 3 per cent on railroad freight. If the measure becomes effective it will mean that freight bills will be taxed 3 per cent. In other words, upon a freight bill of $10,000 the tax will be $300, whereas on a freight bill of $100 the tax will be but $3. This measure is considered more equitable than the one which was in effect in 1898 and which taxed each bill of lading a uniform rate of 2 cents regardless of its amount. According to the new plan the shipper is to pay the tax to the government, retaining 1 per cent to defray his own expenses of administration. There will be no stamps. In addition to the tax on freight there will be taxes on domestic wines and beer and it is expected that the returns from the three will total about $107,000,000.

Sphinx Deliveries Promised Oct. 1

The Sphinx Motor Car Co., York, Pa., which recently took over the plant of the Hart Kraft Motor Car Co., has commenced manufacturing operations upon its $695 car and deliveries will be commenced October 1. The car is a light touring model which carries full equipment, including electric lighting and starting.

Motor Car Equipment Takes Bi-Motor

The Motor Car Equipment Co., New York city, has taken over lock, stock and barrel, the Bi-Motor Equipment Co., Boston, Mass., and will continue the business under its own name. The Boston establishment is located at 180-182 Massachusetts avenue and, like the New York one, will be devoted exclusively to wholesale business.

Cadillac Men To Handle Dodge Car

The same stockholders and officers who are interested in the company which handles the Cadillac in Indianapolis, Ind., have formed the Steinhart-Eckler Auto Co., to act as agents for the Dodge cars. Temporary headquarters are with the Cadillac agency on North Capitol avenue, but a new location is being sought.

Bonnell Newark Dodge Dealer

The Bonnell Motor Car Co., Newark, N. J., has been incorporated with a capital of $100,000, to handle the Dodge car in this territory. The incorporators are Horace A. Bonnell, Jacob W. Mason and A. M. Bonnell. A salesroom will be opened at 273-275 Halsey street.

Chevrolet Admitted To N. A. C. C.

The Chevrolet Motor Co., Flint, Mich., has been admitted to membership in the National Automobile Chamber of Commerce. The N. A. C. C. now includes 92 leading motor car manufacturers.

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INDIANAPOLIS FALL SHOW TO BE REPEATED NEXT YEAR

Spring Show in Salesrooms To Be Followed by Tented Exhibition—More Than 200 Cars Sold During the Week

So successful was the motor car show at the Indiana State Fair, Indianapolis, Ind., last week, that the Indianapolis Automobile Trade Association has reserved space for next year. The plan, as outlined by the I. A. T. A., is for dealers to exhibit in their salesrooms during a week to be designated in the spring and then have a united show at the State fair in September. The 1915 session of the Indiana legislature will be asked to appropriate money to build a motor car exhibit building at the fair ground.

Approximately 90,000 people from all parts of Indiana visited the motor car show, to which admission was free. About 200 sales were made during the week, in addition to which dealers obtained many excellent prospects that doubtless will result in sales. The show was held in four large tents thrown into one.

Dealers say that the State fair has solved the motor car show question for many years to come. It places before the farmers the new models after the farmers have harvested and sold their crops and are prepared to buy. A majority of the sales made last week were to persons living outside of Indianapolis.

Practically every car shown was sold and carried a placard giving the name of the purchaser. The plan to award prizes to the counties having the largest number of cars on the fair ground was abandoned owing to the inability to get the cars from the various counties together.

TRUCK CONVENTION PLANS PRACTICALLY COMPLETE

(Continued from page 5)

object of the paper and the discussions will be to show how this evil can be reduced, as well as to offer means for making this business more profitable to the dealer.

"Evils from Overloading and Overspeeding and Avoiding Too Heavy Bodies" is another subject to be discussed. Manufacturers, dealers and body makers have been invited to prepare short symposiums on different aspects of this question. Axle and spring manufacturers have also been invited to participate.

"Used-Truck Market Reports" has been listed as a subject. The recent "Used-Car Central Market Reports" published by the Chicago Automobile Trade Association has resulted in the suggestion that similar reports be arranged for the motor truck field. It is believed that such would be of value and would serve as a guide to the dealer who is not familiar with the value of used trucks.

"Traffic Engineering" will be handled by at least two experts in this line. Their papers will tell how the dealer can improve his conditions in this way.

"How to Calculate Costs," a question many manufacturers and dealers are asking themselves, will be analyzed in special papers by at least three traffic engineers who specialize in this work. Their papers will be direct and valuable, so that much of the information given can be applied at once by the dealer.

"Territorial Lines for Dealers" will be handled by two or three makers. There is a movement to restrict dealers' territories and demand more intensified selling efforts. This aspect of the question will be discussed. The problem of carrying adequate supply of parts for trucks sold is one that enters into this topic.

"Tires for Motor Trucks" will be one department of the convention to be handled by four of the leading truck manufacturers who have been invited to prepare papers specially for the benefit of makers and dealers.

One manufacturer has agreed to present a paper entitled, "Parts to be Carried in Stock by Dealers." His paper will go into the many ramifications of this subject.

There are many other subjects that will be brought up, among which are:

"Loading Devices, Their Merits and Shortcomings."

"Driver's Influence on Successful operation."

"How Manufacturer Can Cooperate with Dealer in Advertising."

"The Export Business, Best Fields and How to Develop."

"Motor Truck on the Farm."

Already the local committee has made active progress. Headquarters and all convention sessions will be in the Hotel Cadillac. The pleasure of those attending the convention is being well looked after. On Wednesday there will be a Dutch lunch with cabaret. Thursday evening the Detroit committee will tender a theater party to all delegates. On Friday evening the official banquet will take place.

SPACE BY INVITATION FOR THE 1915 NATIONAL SHOWS

Chamber to Limit Number of Exhibitors Because of Lack of Room for All—Practically Everyone Invited, However

The 1915 shows in New York and Chicago are to be invitation affairs. This has been necessitated by the great number of applications for space which are far in excess of those that can be cared for. In consequence, the National Automobile Chamber of Commerce will limit the number of exhibitors to those who can be cared for properly. Invitations have been sent out to members of the Chamber and to practically every outsider who has exhibited at the shows in the past. All applications for space must be in the hands of the Chamber prior to October 3 to participate in the first allotment.

The drawings for space for both shows will take place at the offices of the N. A. C. C. on Thursday, October 8, in connection with the semi-annual meeting of that organization.

Allotment of space will be confined to members of the N. A. C. C. and subject to the rules of that organization, to members of the Motor and Accessory Manufacturers, the Motor Cycle Manufacturers' Association and the Electric Vehicle Manufacturers' Association and to such other persons and companies as may be formally invited by the management to participate.

Briscoe Price Reduced To $785

Supplementing the description of the Briscoe cars, which appeared in Motor World for August 26, the Briscoe Motor Co., Jackson, Mich., has announced that the price of its touring model has been reduced from $900 to $785, the new price including complete equipment, with electric lighting and engine starter. The price of the roadster also has been reduced to $785.

Tire Situation Readjusts Itself

Tire prices have practically returned to the figures which existed before the European war. The last to make reductions were Goodrich, Diamond, Republic, United States and Fisk. These are maintaining the advanced list prices promulgated at the outbreak of the conflict but have returned to their former dealers' prices. Fisk advanced 15 per cent, the others 12½.

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War Affects Dealers Little

Discredit Calamity Howlers and Keep Right on Selling Cars—Five Tell of Conditions.

The European war situation, which has played such havoc with the foreign motor car trade, has had little or no effect on the American industry, at least insofar as the dealer in motor cars is concerned.

Practically without exception dealers all over the United States report that thus far sales are ahead of those of last year and that the Franco-German struggle has exerted no bad influence on their sales.

Although it might have been expected that sales would show at least an appreciable slowing up, due to the chaotic state of affairs abroad, that this is not the case is indicated by the following reports which have been received by Motor World:

Little Damage Declares Budlong

"The sale of high-grade American cars will suffer very little on account of the European war, for the very simple reason that what is lost in one way will be made up in another.

"The war naturally has affected business in New York more than it has in the West, and in New York it naturally has affected such industries as the automobile business more than it has affected trade in the common necessities. The injury cannot be very great, however, nor can it be permanent.

Buyers Are on Vacation

"At the moment it is difficult to make a complete analysis of the high-grade car situation on account of the fact that a large number of the people who can afford and buy the best cars are still out of the city on their vacations. Indications are that at the worst any reduction in trade will be merely temporary, because those of our patrons who are in the market for cars, but who have held off in placing their orders, have invariably said that they are going to buy just as soon as business becomes adjusted to the new conditions.

"Another influence which will have a permanent as well as a temporary good effect upon the American high-grade car business will be the practical elimination of the foreign-made cars owing to the inability of their importers to guarantee delivery and to supply parts and supplies. Many of those who have driven foreign cars previously have done so as a matter of habit more than anything else and have not realized the superior qualities of American cars, particularly for American conditions.

"Present indications being that the struggle in Europe will not be terminated shortly, business interests and popular sentiment in this country are bound to settle to a rational basis.

Operating in Usual Way

"In the conduct of our own business here in New York, where war excitement runs the highest, we are going on just about as usual. We may practice minor economies, such as would be a good thing for us anyway, but we do not intend to curtail any of the expenditures which affect the proper conduct of our various stores and service stations and the proper care of our customers. I absolutely predict a gradual readjustment of trade conditions to meet tthe new requirements which have been thrust upon us, to our advantage as well as to our disadvantage. There seems to be no real foundation for calamity howling. Meanwhile, we expect to go right about our business, selling as many cars as we can, which from present sales and prospects will be a good many, and taking care of our trade according to our usual procedure."

M. J. Budlong, President,
Packard Motor Car Co. of New York.

Sees Big Business for 1915

"The foreign wars have not affected the sale of our 1915 models in this locality in the least.

"It has not been necessary to adopt any new plans in reference to marketing our product.

"August deliveries this season are much in excess of August deliveries as of a year ago. The only thing we can attribute this to is 'Public Demand,' and when the public demands such deliveries it certainly must have plenty of money and their hearts all in normal position. I might also state we have plenty of orders to care for our winter allotment, and they also show a grand increase over orders placed for such shipments covering a corresponding date during the previous year. Unless something unforseen overtakes us, we are certain 1915 will be by far our banner year."

E. T. Strong, Manager,
Buick Motor Co., Chicago, Ill.

Albany Man 4400% Ahead

"We don't see that the Franco-German war has had any direct effect on our sales.

"We have not found it necessary to adopt any new plan for sales on that account.

"Our sales for August show 4,400 per cent increase, due to the fact that the Hudson factory was not producing cars to any extent last August whereas they were coming through in very fine shape this August. We could have delivered twice as many cars this August if we could have gotten them."

E. V. Stratton, Pres., Sec'y & Gen. Mgr.,
E. V. Stratton Co., Albany, N. Y.

Anticipates No Great Difference

"We have not as yet adopted any new selling plans.

"Owing to the fact that our season has changed and that we have no cars for delivery in August, as last year, it is impossible for us to form any definite idea as to the relation of the business between August this year and August of last year.

"In general we would say that it will be difficult to determine what effect this war situation will have on our trade until our winter people return to this city, as practically all of our customers leave St. Louis during the summer months. We do not anticipate at this time any material difference in our business."

F. B. Mauver,
Halsey Automobile Co., St. Louis, Mo.

Conditions Change for Better

"The European war has caused a temporary feeling of uncertainty. Conditions, however, are rapidly changing for the better.

"We have done nothing out of the ordinary in the way of increasing sales with the exception of discrediting the usual number of calamity howlers and working our sales force a little harder and longer.

"Our business for August this year was less for two reasons. First: We had practically nothing to sell for August—having completely sold out July 31. Second: Our inability to get 1915 productions."

L. B. Sanders, Branch Mgr.,
Oakland Motor Co., Boston, Mass.

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The "Eight" Arrives

Another movement has entered the motor car field, namely, the eight-cylinder one, which gives promise of creating much discussion during the next few years. This movement is not new in the motor world. It is nearly six years since De Dion brought out its first eight-cylinder motor, which design it has been manufacturing and marketing for passenger car work ever since. While this leading French maker has been a consistent exponent of eight-cylinder design, practically no other foreign maker has taken it up; but suddenly America has entered the arena and the Cadillac company has decided to make an eight-cylinder model its standard car for 1915.

Its Future Is Sealed

The eight-cylinder movement cannot be estimated at the present; in fact, it is impossible to form a vague calculation of what it will amount to five years hence. At present there is widespread interest in it. It is well known in manufacturing circles that no fewer than half a dozen other makers have been experimenting with eights during the past four or five months.

The eight has not a few attractions and the difficulties that the dealer might imagine would arise from eight cylinders are not so great because of the simplicity of the motor. The crankshaft is as simple in design as a four, and practically as short as it would be in a four-cylinder motor. There is but one camshaft, and on this there are but eight cams. The cylinders are generally formed in two blocks of four each, these blocks being mounted at 90 degrees to each other. What ignition troubles there once were with the eight have largely been eliminated, because for a couple of years eights have been running with the utmost satisfaction so far as ignition, cooling or carburation are concerned.

To the buyer the eight will prove interesting, as it allows a shorter wheelbase, the estimate being that with an eight-cylinder motor the wheelbase can be from 12 to 14 inches shorter than with a six of the same power.

Its Disadvantages

But balanced against the merits are some disadvantages. In present designs the motor accessories are generally grouped in the open V between the groups of cylinders where they interfere with the valve accessibility, although it would seem that by using transverse shafts at the front or rear this difficulty could be overcome. The eight must naturally have more parts than the six, the same as the six has more than the four. There are more valves, more valve springs, more pistons, more piston rings, more connecting rods and connecting rod bearings.

From the weight point of view there is little to choose between the six and the eight, although the advantage may rest with the eight because of shorter crankshaft, crankcase, and naturally lighter reciprocating parts due to the smaller motor sizes.

Greater Flexibility

With the eight there are four explosions per revolution of the crankshaft, one every quarter revolution, whereas with the six there are but three explosions per revolution and consequently one every 120 degrees. If three explosions per revolution give greater flexibility than two per revolution, as in the four, then it cannot be denied that four explosions per revolution will give greater flexibility than three; in other words, the eight is more flexible than the six. Flexibility is a great aim in motor car construction; it means economy in bearings, economy in tires, and economy in car operation in general. Whatever aims to increase flexibility should be desirable, provided the means to attain such an end are in due proportion to the objective.

Garages and Gasolene

The national review of the garage-gasolene situation which is presented in this issue of Motor World reveals a condition the proportions of which had not before been generally recognized. This is the extent to which filling stations and small fuel dealers are cutting into the garage gasolene business.

Filling stations are a source of strong competition in one or two cities, it was known, but the review discloses a general tendency which may eventually take the gasolene business out of the garage entirely.

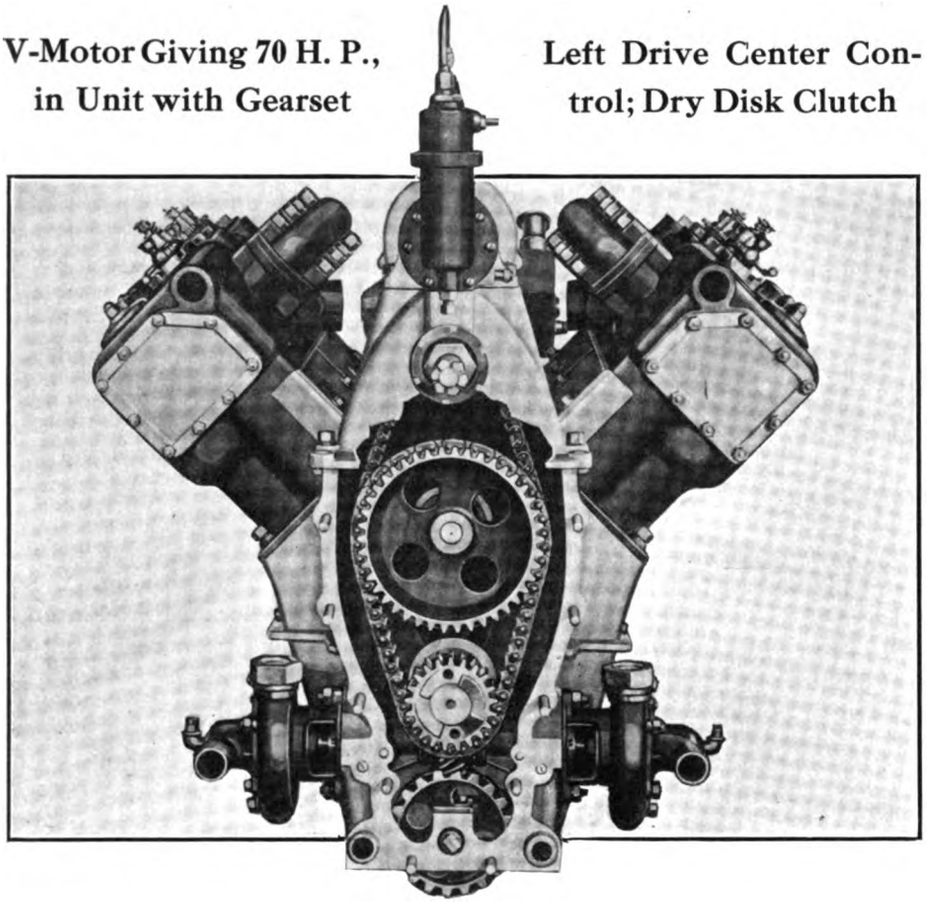
The filling station operates at a smaller profit than the garage can stand and if the one gains the other must lose.

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Cadillac Reveals 8-Cylinder Model—Sells at $1975—Pioneer in the American Field

V-Motor Giving 70 H. P., in Unit with Gearset

Left Drive Center Control; Dry Disk Clutch



Cadillac cylinders are set at an angle of 90 degrees with a single camshaft operating all 16 valves directly over the crankshaft; there are two water pumps, one for each block of cylinders

The latest Cadillac product is an eight-cylinder car which sells for $1,975 in touring form, with complete equipment, including Delco electric lighting, starting and ignition. In thus passing at once from the four-cylinder type, which so long has been a Cadillac feature, to the eight-cylinder car, the Cadillac Motor Car Co., Detroit, Mich., has established a precedent in American motor car building and has reserved for itself the distinction of being the only American builder to produce an eight.

The motor in the new car has its eight cylinders cast in two blocks of four, the cylinder dimensions being 3⅛ x 5⅛. The S. A. E. formula, therefore, gives the motor a rating of 31.28 horsepower, but that this is totally inadequate is revealed by the accompanying power diagram, which shows that 70 horsepower is given off at 2,400 r. p. m.

Among the other important changes which have been made in the Cadillac chassis is the shift from right side driving to left driving. In the new model the steering wheel is at the left with the control levers in the center. The hinged steering wheel is retained. The cone clutch has given way to a dry-plate disk member and the gearset now is incorporated as a unit with the motor instead of being amidships as heretofore.

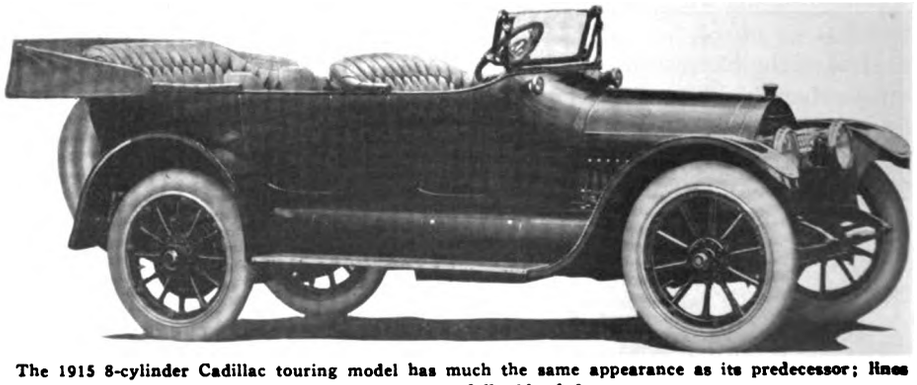
Bodies have come in for little change, being of the smooth-sided type with present-day lines gracefully worked out. The usual array of closed types is offered, while in addition to roadster and five- and seven-passenger touring types a four-passenger salon, of open car design, is an attractive member of the family. This car provides a passageway to the rear seat and between the individual front seats. There is only one front door.

Although the eight-cylinder principle of power development is not new by any means, it having had much success in aeroplane work as well as in the cars of the well-known French maker, De Dion Bouton, motors of this number of cylinders are doubtless little known to the general public. It has remained for Cadillac, always a pioneer in the development of new motor car features, to popularize this latest of internal-combustion engines in this country, for purely from the standpoint of performance alone it has no equal.

In the days when standardization, accuracy and reliability were still more or less lacking from motor car construction, the added complication resulting from an increase in the number of cylinders, even from four to six, was greatly frowned upon, largely because lack of dependability caused the necessity for frequent adjustment and replacement.

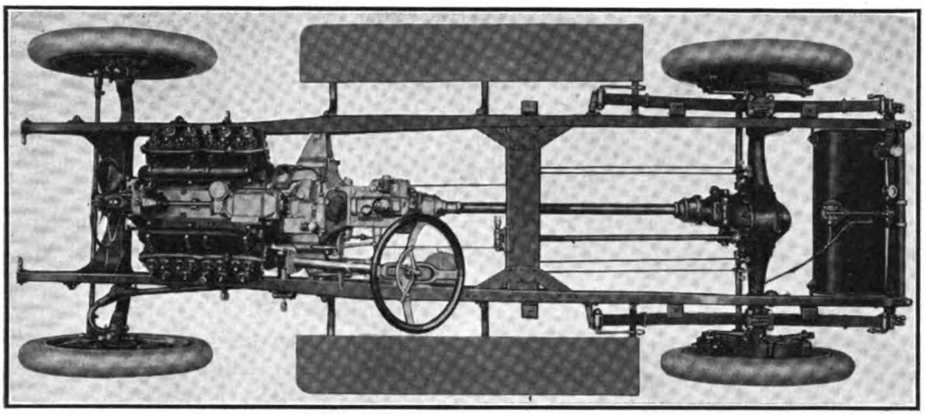
Now, however, although simplicity is as much sought after as ever, there is justification in departing a little from its narrow confines, because commendable standardization and greater reliability have permitted the attainment of sufficient improvement to warrant the added complication. Therefore, in using eight cylinders instead of six, or four, the small added complication is greatly overshadowed by what such a number will do as compared with four or six as regards performance.

Naturally the first question which will be asked is why the addition of two cylinders will make such a difference in performance justifiable. The greatest point of superiority of the eight is in the



The 1915 8-cylinder Cadillac touring model has much the same appearance as its predecessor; lines are more carefully blended

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The chassis differs from its predecessor in that the wheelbase is 2 inches longer, the gearset is in unit with the motor, there is a new dry disk clutch and the drive now is at the left

torque or turning effort. In the eight there are eight power impulses during each complete cycle of two crankshaft revolutions. That is, there is a power impulse every quarter turn of the crankshaft and hence there is no intermission between them, but rather an overlapping so complete that the turning effort is practically constant. In the six, there is a power impulse every one-third revolution of the crankshaft, and though there is always a turning effort upon the crankshaft there is greater fluctuation due to the longer interval between impulses. In the four-cylinder engine, an impulse occurs every half revolution, and there are obviously periods in the cycle when there is no appreciable force exerted by any of the pistons. The flywheel is called upon to carry the shaft over these power lapses.

The simplest arrangement of eight cylinders would be all in line, just as the six or the four is arranged. This would be impracticable, however, because of space requirements and also because of the abnormally long crankshaft which would be necessitated. Incidentally, the crankcase for such an engine would be abnormally heavy. To obviate these difficulties the Cadillac cylinders are arranged in two sets of four opposite to each other at an angle of 90 degrees, the same angle as it would be necessary to set the two series of four crankshaft throws were the cylinders arranged in line. This placing of the cylinders in sets at an angle of 90 degrees to each other gives the V form.

Arranged in this way, the eight-cylinder motor is no longer than a four-cylinder one of equal bore. As compared with a six, it has about 30 per cent less length, resulting in a shorter crankcase and reduced weight. In addition, the crankshaft is of the same form as that of a four, the throws being all in one plane; as those of a six crankshaft are in three planes the eight is a simpler manufacturing job. Further, the shorter shaft is less given to periodic vibration. The camshaft is also shorter and less prone to whipping.

Considering the weight of a six and an eight, the shorter crankcase, crankshaft and camshaft, lighter reciprocating parts and flywheel, give the eight a distinct advantage where both engines give the same power. In the Cadillac case, the new motor has proven to be fully 60 pounds lighter than the four-cylinder engine formerly used.

Because each set of cylinders may be cooled separately, and due to the angle of the jackets, there is no chance for any of the water to get into the pockets, the cooling of a V-shaped eight is superior to that of a six or a four. The natural tendency is for the cold water to flow downward through the jackets. The water also tends to rise to the hottest points of the jackets.

Aside from the purely mechanical advantages of the newest type of gasolene motor, the dealer and car owner are specially interested to know just how these advantages affect the working of the car so far as the actual driving of it is concerned. It is only natural for the average man to say to himself that perhaps the eight is theoretically superior to the six, but that when it comes to actual road work there is probably little difference.

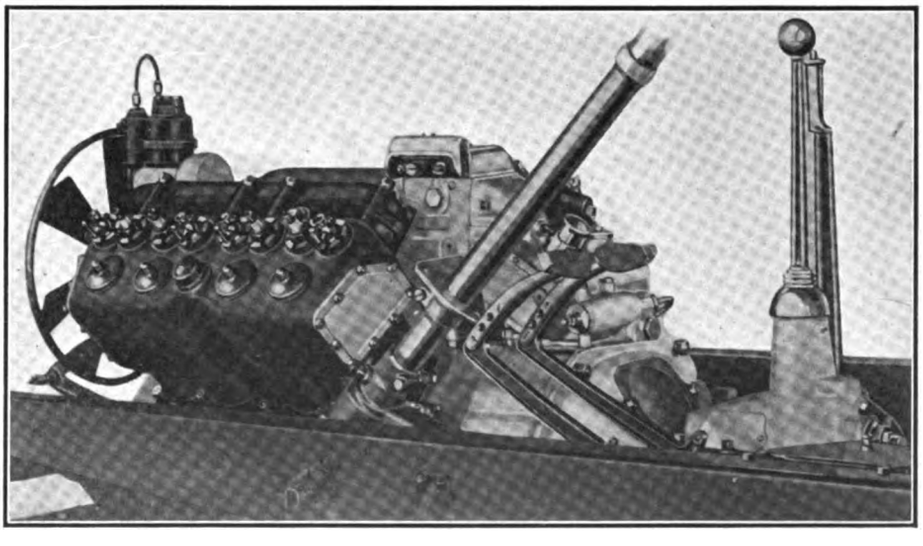
In the course of a 60-mile run over rolling country where hills abounded, some of them quite steep, ample opportunity was afforded the Motor World man to judge of the really surprising performance of the car.

Gearshifting proved to be almost an unnecessary operation, speeds anywhere from 2½ to 55 or 60 miles an hour being attainable in high gear. The quick acceleration from slow running to passenger train travel with no apparent effort

CADILLAC EIGHT-CYLINDER CHARACTERISTICS

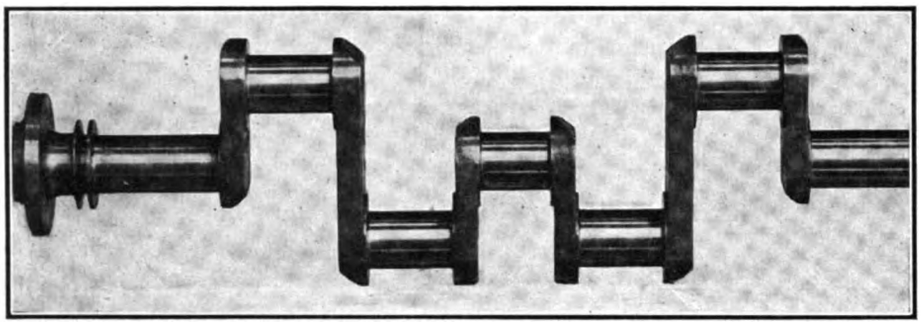
Price:	
Touring	$1,975
Roadster	1,975
Limousine	3,450
Coupe	2,500
Sedan	2,800
Make of motor	Cadillac
Number of cylinders	Eight
Shape	L-head
How cast	Blocks of four
Bore	3⅛
Stroke	5⅛
S. A. E. rating	31.28
Ignition	Delco
Carburetter	Cadillac
Starting-lighting	Delco
Clutch	Dry disk
Gearset	3-speeds selective
Wheelbase	122
Tires	36 x 4½
Wheels	Wood
Steering	Left
Control	Center
Make of axles	Cadillac
Type rear axle	Floating

Equipment: One-man top, Warner speedometer, power tire pump, electric lighting and starting system, etc.



The 8-cylinder motor is considerably shorter than a six and not very much wider; the power tire pump is mounted just behind the fan and is gear driven; gear shift lever is centrally located

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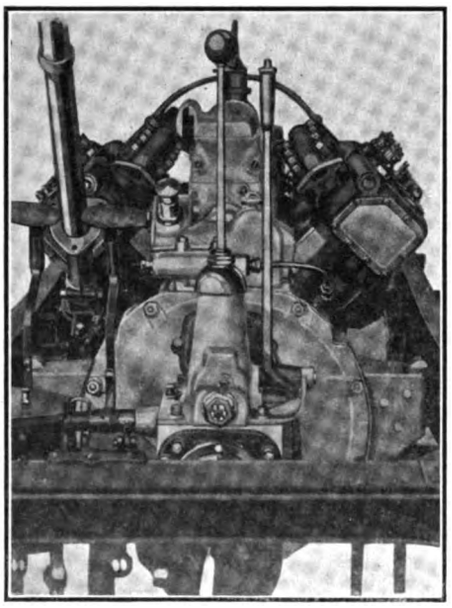


In the 8-cylinder motor there are but four crank throws, two pistons on opposite sides being connected to each; this simplifies manufacturing and tends to obviate the possibility of vibration

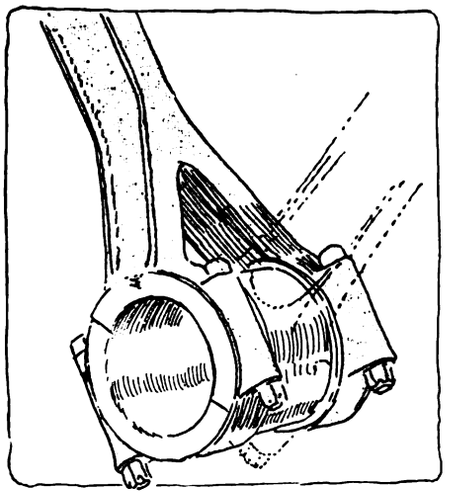
was remarkable. Bad stretches of road, turn outs for slow-moving vehicles and other traffic obstructions very rarely made it necessary to drop into second gear. Nor was this high-gear driving done with apparent effort; the car controlled with the throttle alone just as if it were an electric responding to a current control lever. There was an undeniable feeling of security in driving the car, for the possibility of "killing" the motor does not occur. The motor never appears to be in distress, but pulls evenly under any load up to its limit.

Considering the Cadillac motor in detail, the two sets of four cylinders are each block cast and present much the same general appearance as any other block of four. The bore is 3⅛ inches and the stroke 5⅛ inches, giving a total piston displacement of 314 cubic inches. The S. A. E. formula, which really is not applicable, gives a rating of 31.28 horsepower. On dynamometer tests, it has developed 70 horsepower.

The blocks of cylinders bolt to the copper alloy aluminum crankcase which is common to both and which is split horizontally into upper and lower sections, the lower portion being the oil base. The upper half carries the crankshaft, which has three main bearings. Both sets of connecting rods connect to this shaft, one throw bearing taking care of a pair of rod ends in opposite cylinders. One rod has a yoked end, the other rod end fitting within the yoke arms. Two caps are thus required for the yoke rod, one for each arm of the yoke. These fit around the outer part of the bushing, gripping it rigidly, due to the cap bolts, and in addition there are pins through the rod into the bushing to insure the two moving together. The other rod fits around the bushing within the yoke and is free to turn on the bushing. In operation, the bearing for the rod-end yoke is the inner surface of the bushing against the shaft, while that of the other rod is the outer surface of the bushing. These bearings have babbitt linings in reinforced phosphor bronze shells. Thus there are four connecting rod bearings on the crankshaft just as in a four-cylinder motor. The crankshaft length to the outer ends of the end bearings is 26½ inches.



The compact design of the motor is apparent; gearset and motor form a rigid unit



One connecting rod clamps the bearing tightly and the other is free to move upon it

Directly above the crankshaft is the single camshaft with eight cams, each operating two opposite inlet valves or two exhausts, as the case may be. The cam assembly is on the underside of a plate which bolts to the top of the crankcase between the two blocks of cylinders. Pivoted to this plate also are the small arms, which are interposed between the ends of the push rods and the cams so that the lift will be straight upward. The camshaft has five bearings.

Vertically in line above the camshaft and crankshaft is the generator shaft, which drives the fan and the combined motor-generator mounted on top of the camshaft plate and between the cylinder blocks, and also carries a gear which may be meshed with that of the tire pump.

Both camshaft and generator shaft are driven by silent chains housed at the front end. The camshaft carries two sprockets, the outer for the chain running to the crankshaft sprocket and the inner driving the chain which passes around the generator shaft sprocket.

At the front of the engine and below the crankshaft is a transverse shaft driven from the crankshaft by spiral gears. A centrifugal water pump is located on each end of this shaft, one taking care of each block of cylinders.

In order to secure the accurate balance necessary to eliminate vibration in a high-speed motor of this type the pistons and connecting rods are machined to very close limits. Uniformity of weight is important. Remarkable lightness of these parts has been attained due to the use of a special alloy steel for the rods which has great strength with extreme lightness, and also the special form of the cast iron pistons, each of which has three ring grooves with three thin steel rings per groove. The wrist pins are fixed in the connecting rods and oscillate in the pistons. They are constructed of chrome nickel steel tubing, case hardened and ⅝ inch in diameter.

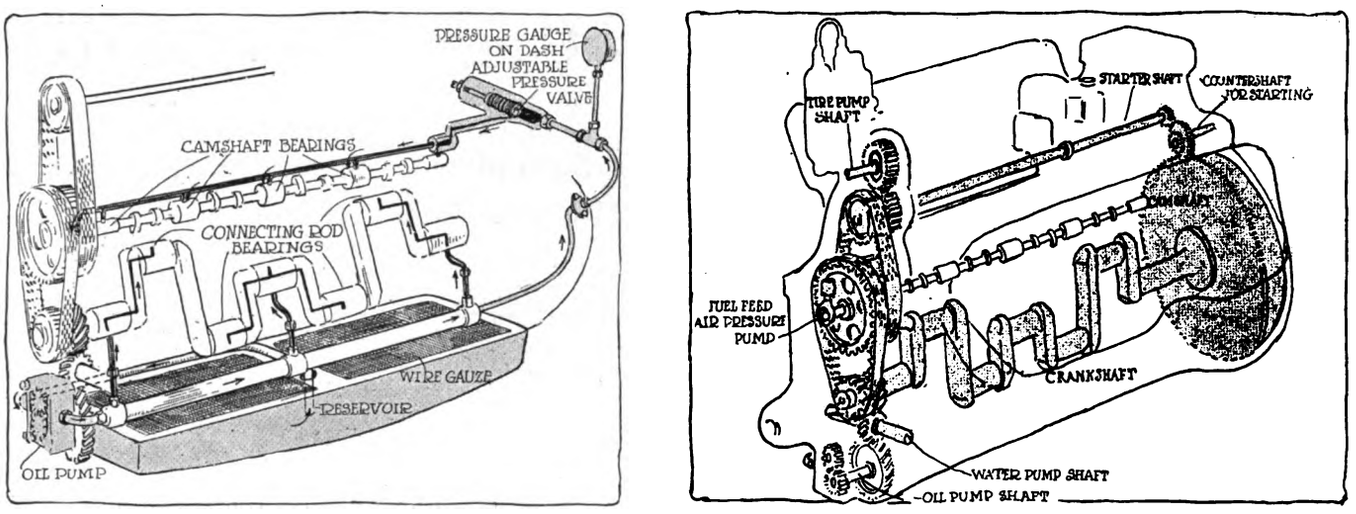
As another indication of the refinement to which this motor has been subjected, the inlet valves are of tulip shape, so as to facilitate the intake of the gas. The exhaust valves are of the flat type of tungsten steel.

In firing the order alternates from one side to the other, so that there is a power impulse first from a cylinder on one side followed by an impulse from a cylinder on the opposite side. The order of firing is as follows:

Front
6.....1
4.....7
8.....3
2.....5
Rear

That is, No. 1 cylinder on the right

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Diagrammatic drawing, showing the plan of the force feed oiling system and the path of the lubricant—Right shows the arrangement of the shafting and the method of drive

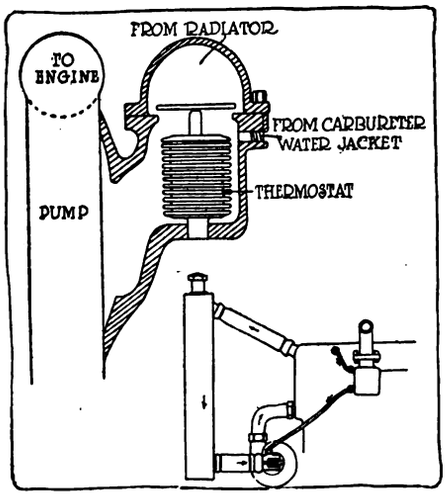
fires first, then No. 4 on the left, No. 3 right, No. 2 left, and so on. As to the timing, the inlet valves open at top dead center and close 45 degrees after bottom dead center, while the exhausts open 45 degrees before bottom dead center is reached and close at top dead center.

The Cadillac single jet carburetter, specially adapted to this type of motor, is used. It occupies a position midway of the engine and between the cylinder blocks. A form of U manifold runs from it to the two cylinder blocks, the distribution to the various cylinders being done within the casting.

A new feature is the application of thermostatic control to the temperature of the cooling water so that in running the water is maintained at nearly a constant temperature. In principle this thermostatic regulation is the same as the form used in connection with the heating systems of houses for controlling the heat in the rooms.

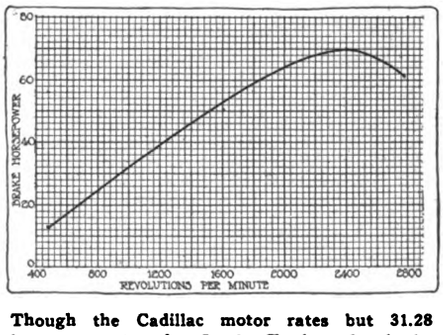
In the Cadillac application there is interposed in the water pump line for each set of cylinders a thermostat which is simply a small coiled copper tube containing a liquid which expands or contracts in accordance with the temperature, thus slightly lengthening or contracting, its total movement being one-quarter inch. This thermostat operates a valve so that when it expands it raises the valve from its seat, this valve controlling the flow of water to the radiator from the pump. A by-pass connects with the water jacket of the carburetter and when the engine is started the water is naturally cold. Therefore the thermostat is contracted and its valve on its seat. Thus the radiator water is shut off, the circulation being simply through the water jackets of the cylinders, through the by-pass to the carburetter jacket and thence back to the cylinders.

There is thus only a small part of the



The temperature of the cooling water is regulated by a thermostat which governs the passage of the water from the jackets to the radiator

water circulating, and when this heats up the thermostat begins to expand and lift its valve from its seat, letting the radiator supply flow into the system.



Though the Cadillac motor rates but 31.28 horsepower by the S. A. E. formula, brake tests have revealed as much as 70 horsepower

This action continues back and forth, so that the water temperature is nearly constant.

The engine incorporates a system of positive force feed lubrication. A gear pump, located at the forward end of the motor and driven from the crankshaft, takes the oil up from the oil pan in the lower part of the crankcase and forces it through a supply reservoir running along the inside of the crankcase, from which there are leads to each of the main bearings. The webs and crank shaft are drilled and oil is forced from these main bearings to the connecting rod bearings through the drilled holes. The forward and rear bearings supply the rod bearings nearest them, while the center bearing takes care of the rod bearings on either side of it. The oil is then forced from the main reservoir pipe up to the relief valve, which maintains a uniform pressure above certain speeds and overflows from this valve to a pipe extending parallel with the camshaft and above it. Leads from this latter pipe carry lubricant by gravity to the camshaft bearings and front end chains. Pistons, cylinders and piston pins get their oiling by the oil thrown from the lower ends of the connecting rods.

As heretofore, the Cadillac uses the Delco combination electrical unit for cranking, lighting and ignition, the special eight-cylinder distributer being in unit with the motor-generator. The unit is driven as a generator from the camshaft by a silent chain, its shaft being placed directly above the camshaft. The generator runs at crankshaft speed. At the rear end of the generator is the train of gears which mesh with the teeth in the flywheel rim for cranking purposes. These gears are not in mesh unless the starter pedal is depressed and the reduction between electric motor speed and engine speed is 25 to 1. The Delco unit temporarily becomes an electric motor in the usual way for cranking.

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The Cadillac changes this year are not all in the motor, for the chassis is altered considerably also. The wheelbase has been lengthened from 120 to 122 inches, while left drive and center control replace right drive and control. The hinged steering wheel, which was an innovation last season, has been retained.

In the transmission system a big alteration appears in the incorporation of the gearset in unit with the motor instead of locating it amidships as heretofore. The same type and design of three-speed sliding gearset is used, however. The cone clutch has also given way to a nicely designed disk-clutch of the dry plate type. This has 15 carbon steel plates 7¾ inches in diameter, the driving plates, eight in number, being faced with wire mesh asbestos.

The drive shaft continues to be of the unenclosed type, fitted with two universals and being paralleled by a triangular torque arm.

A floating type rear axle, which is similar in general construction to that formerly used, is employed. This axle is, however, of the latest form in that worm bevel gears replace straight bevels for the ring gear and driving pinion.

The worm-bevel gearing which made its appearance last year provides a rolling contact along the teeth and this is conducive to smooth running and quietness.

In other respects the chassis is about as it was. The frame is of bottle neck form, 33 inches wide in the rear and 30 at front. The characteristic Cadillac platform rear spring suspension is retained. The gasolene tank is at the rear with pressure feed to the carburetter. Tires are 36 x 4½ inches on demountable rims and wood wheels. It is a notable fact that the new Cadillac is much lighter than its predecessor.

Henshaw Made Dodge Boston Dealer

The Henshaw Motor Co., Boston, Mass., of which C. B. Henshaw is head, has been designated by Dodge Bros., Detroit, Mich., as representative for the Dodge cars in the New England territory. Henshaw long has been known as an aggressive motor car dealer. Formerly he was connected with the De Dion Bouton Co., the New York Tire Co., the Thomas Motor Co., and the Packard Motor Car Co. of Boston.

Detroit Gear Adds To Plant.

A two-story brick building will be started within a few days as an addition to the plant of the Detroit Gear & Machine Co., 129 Franklin street, Detroit.

Dealers Urge Cooperation

Price-Cutting Strongly Condemned at Two-Day Minneapolis Convention

The first annual convention of the Retail Automobile Dealers' Association was held at the West Hotel, Minneapolis, Thursday and Friday, Sept. 10-11. More than 250 delegates from all parts of the Northwest were present.

At 10 A. M. Thursday the delegates registered. The first business session convened at 2:30 P. M. President C. W. Jewett, of Bemidji, Minn., called the convention to order. In brief he sketched the history of the organization, which is only a year and a half old. He told of the efforts, successful after a year, of the organization which was born in February, 1913, in Minneapolis, and spoke of the accomplishments since then; how the membership had grown by leaps and bounds and how the doctrine of business cooperation had been instilled in most of the automobile dealers in the Northwest.

H. K. Zuppinger, secretary of the Minneapolis Retail Hardware Association, told of the formation of his association. He said that to combat the mail order competition the public must be educated to the fact that quality and service can be obtained only from the home concern; that cheaper goods come from the mail orders. "No agreement as to prices can be reached because that is illegal," he said. "There is no business without abuses. The motor car business is new. In solving trade problems you have no precedents to go by. They must be worked out first hand."

P. C. Frazee, Pelican Rapids, secretary-treasurer of the association, said that some of the worst business abuses were among the retailers themselves. He strongly condemned the practice of cutting prices and the giving away of tires and other automobile equipment to customers. He advocated a mutual insurance for the retail dealers on their garages and stock.

C. F. Miller, of Long Prairie ,a director of the Implement Dealers' Association, seconded Mr. Frazee's advocacy of mutual insurance, saying that it had worked well with the implement dealers.

Edward S. Babcox, advertising manager of the Firestone Tire & Rubber Co., Akron, O., in a paper on "Cooperation Which Helps the Dealer," after sketching conditions in the early days, said in part:

Business men of vision and long range imagination coming to be heads of old institutions realized the importance of the dealer. They realized that the dealer is the pivot in practically all sales campaigns except those, of course, where the manufacturer sells direct to the consumer. . . .

The dealer is the last link between the manufacturer and his consuming public. He can make or break the manufacturer in his territory. He, it is—the dealer—who with his activity, his integrity and his business promotion can advance the manufacturer's interests more than any other force in his territory.

Realizing these things, then it is only natural that the modern manufacturer should realize the pivotal importance of the dealer and endeavor to do everything possible, not only to sell the dealer—but to help the dealer sell the goods to the public.

So, we find today that when salesmen from these big factories come out here in Minnesota and in all parts of the country for that matter, and call on the dealers with their various lines—we find these salesmen talking, not so much about selling the dealer as about what the factory is going to do to help the dealer in his local personal sales. . . .

Many a business man, starting with a definite purpose, feeling with a definite purpose, feeling absolute confidence in his theory, never doubting his ability to win, has traveled toward a great business success and, by listening to fool advice, has turned aside and landed on an island instead of the mainland of achievement.

Yes, we have got to steer a straight course and keep our eye on the target—the destination.

Dealers more and more are becoming to be regarded as an important and large factor in many organizations. They are regarded as they should be—as necessary and important links in the chain of development. . . .

You ask me now what can the automobile and automobile accessory dealer of today expect in the way of specific cooperation from the factories he represents.

There are many, many things which he should not only demand, but use and capitalize.

In the first place, before putting in a line at all, he should be sure that it is a standard, advertised line, because that means it will be much easier to sell. People believe in Ivory Soap, Tiffany Silver, Colgate's Shaving Cream much more confidently than they do in some unbranded goods which have not back of them the educational campaigns necessary to familiarize the public with them.

With such a product, well advertised and well established in the general public mind, your sailing will be much simpler than with a brand new unknown product, whether it be automobile carburetter, spark plugs or tires. . . .

Perhaps you have a mailing list of possible customers. Your factory should assist you in circularizing this list with suitable matter which would be to your interest. Printed matter, such as folders and booklets for enclosing in your outgoing mail, should be sought, secured and used regularly. If there be any dealer who is contemplating a special campaign, to which he is willing to contribute part or all of the cost, he should certainly find in these enlightened days of business activity that one or more of his manufacturers will give him expert assistance and ad-

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vice through the medium of its advertising and promotion departments.

Do not get the idea that the advertising which you do in your local territories is not helpful. Do not get the idea that the general advertising of the manufacturer is not helpful.

During the sessions a committee was appointed of country retail dealers whose business will be to note and keep track of everything that comes out in the country that is detrimental to the retail dealers. This committee will report to the head office of the association, and officials will investigate and endeavor to stamp out, if possible, whatever abuses are noted in the trade.

G. A. Will, an attorney, of Minneapolis, closely identified with association work, and the automobile industry, then summed up all that had been said and pointed out the necessity of a thorough organization in the retail automobile business, in order to secure that cooperation which is so essential to the elimination of the abuses and defects in methods from which the trade now suffers. From his broad experience and thorough detail knowledge of the automobile business, Mr. Will was able to aid did convince the dealers of the necessity of a thorough organization of the branch they represented.

At 6:30 P. M. a banquet was given at the West Hotel. President Jewett was toastmaster, H. E. Pence, of the Pence Automobile Co., Minneapolis, said that the man with the long line of credit made a better business man than the man with capital. "The better your business is conducted, the better your line of credit," he said. "Keep your place of business neat and wholesome. Some automobile dealers believe they are in business to help the factory. You are not. You are in business to get some money. You don't get any credit for selling a car at a discount. The man you sell it to probably thinks you are a sucker."

A paper was read by A. C. King, of the B. F. Goodrich Co., for F. I. Reynolds, the assistant sales manager of the company, who was unable to be present. Mr. Reynolds wrote: "We recognize without hesitation that this industry, whether it is the car part or the tire part, is, and must continue to be dependent on the dealer. If you fail to make a profit you cannot exist and continue in this business, and if you fail, the restriction of our distribution will so far shorten our opportunity to fulfill our destiny that we fail even though we go on. Success and failure are two extremes that have a common starting point, but what is success and what constitutes failure are open to division of many minds.

"Is a dealer a success who makes a profit one year and then moves away because he has built unwisely and along with his profit has established no good will for the future? Is the world wide enough for him to continue moving year after year?

"Any man in any community who is not willing to help support his source of supply in that community is no good to the community, and that applies to all commodities."

L. H. Fawkes, of the Fawkes Automobile Co., predicted that business conditions will be good next year, and spoke of excellent conditions prevalent in the Northwest.

Allen D. Albert, associate publisher of the Minneapolis Tribune, said that automobiles were making a neighborhood of the great Northwest. He predicted that the automobile business in the future had great possibilities and said that he expected to see the day when automobiles in the United States would be just the same as the bicycle, when the average wage earner would ride to his work in a low priced automobile. He added that he expected to see 7,000,000 automobiles being operated here in the not far distant future.

W. R. Burns, of the Goodyear Tire & Rubber Co., asked the pertinent question, who is it that is cutting the prices. He said also that he could see no reason for the rise in the price of tires.

Mr. Babcox, of the Firestone Tire & Rubber Co., gave an illustrated lecture, entitled, "A Picture Trip Through America's Greatest Exclusive Tire Factory," which proved very interesting to the dealers.

Alban Bodine, of Minneapolis, succeeded P. C. Frazee, of Pelican Rapids, Minn., as secretary-treasurer of the association, who resigned on account of press of other business. Mr. Frazee has been secretary-treasurer since the organization of the association and to him belongs the credit for much of the success so far attained. All other officers hold over. It was decided to hold the next convention and annual meeting in Minneapolis during the show next February.



Members of the Retail Automobile Dealers' Association during the banquet at West Hotel in Minneapolis, Thursday, September 10

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AUTOMATIC GEARSHIFT IN REMINGTON $495 ROADSTER

Electric Lighting and Starting and Three-Speed Gearset in New Small Car That Is Being Built on Big Car Lines

The Remington Motor Co., New York, has opened offices and salesrooms at 2 Columbus Circle, New York, and has completed arrangements for the erection of a large factory at Rahway, N. J., for the manufacture of the Remington roadster at $495. A temporary factory has been secured for the production of the first lot of cars, which will be ready for delivery in November.

Philo E. Remington is the moving spirit and vice-president of the company. Brunson B. Monypeny is president, John T. Macgregor treasurer, Carl W. Bliss secretary and Clarence P. Hollister chief engineer. Monypeny, Remington and Macgregor, with James Barber, William Grant Brown and Robert T. McKee form the board of directors. The company was incorporated in June with a capital of $500,000.

The car is a two-passenger roadster built on conventional lines, but on a small scale, the wheelbase being 100 inches, the tread 42 inches and the weight between 750 and 800 pounds; the price is $495 with electric lighting and starting and full equipment. An automatic gearshifting device is a feature of the car.

A four-cylinder L-head block-cast 2¾ x 4½ motor is a unit with the three speed gearset and the inverted cone clutch, the unit being on a three-point suspension. Lubrication is by splash with pump circulation, cooling by the usual method with circulating pump, and ignition by the Atwater Kent system with automatic spark advance.

The Hollister gearshift permits the centrally located gear lever to be set for any of the three speeds whether the clutch is engaged or not; but the gear will not be engaged until the clutch is operated. The driver can select his gear in advance, and make the actual shift by the usual movement of the clutch pedal. Or, if he prefers, he may use the gear lever in the ordinary way.

Drive is through a propeller shaft with two leather universals, bevels and a four-pinion differential to the three-quarter floating rear axle. A pressed steel torque member is used. Wire wheels are regular equipment, but wood wheels will be furnished as an option. Tires are 28 x 3. The front spring is a transverse semi-elliptic and the rear springs three-quarter elliptics. Steering is by worm and sector gear, adjustable, with 15-inch wheel. Service brakes are metal to metal, running in oil, consisting of two bands enclosed in the differential housing and adjustable from outside; the emergency brakes are on the hubs in the usual way.

Equipment includes top, side curtains, windshield, speedometer, electric horn, electric starting and lighting system with headlight dimmers, and the usual tools. The body—but one style is built—is of steel with tapered hood and, in fact, big car lines throughout. The color is gray, with black striping.

ENGER LIGHT SIX COSTS $1,495, FULLY EQUIPPED

Touring Type for 6 or 7 Passengers—124-Inch Wheelbase, and Electric Starting and Lighting

A new six-cylinder car has been brought out by the Enger Motor Car Co., Cincinnati, O., to sell for $1,495 with complete equipment, including electric lighting and starting; a single model is offered, a six- or seven-passenger touring car with a wheelbase of 124 inches and 34 x 4 tires.

The motor is block cast with cylinders 3½ x 5, giving an S. A. E. rating of 29.4 horsepower; valves are enclosed. Ignition is by the Atwater Kent system with both automatic and manual spark control.

Electric lighting and starting are provided for by a separate generator and starting motor. The cooling water, pump circulated, passes through a square-tube honeycomb radiator. The carburetter is a Rayfield.

Power is transmitted through a multiple-disk clutch and three-speed gearset, forming with the motor a unit power plant, and propeller shaft to the floating rear axle. Wheels are of wood with Firestone demountable rims carrying 34 x 4 Firestone tires. Front springs are semi-elliptic and rear springs three-quarter elliptic.

The equipment consists of one-man top, quick adjustable curtains, windshield, electric horn, Stewart-Warner speedometer, extra rim and the usual tools, etc. A gasolene gauge is mounted on the dashboard, and, with the other instruments, is electrically illuminated. A dash adjustment for the carburetter makes starting easy in cold weather.

MOLINE-KNIGHT NEW CARS INCREASED IN PRICE $100

Four Speeds Instead of Three in Touring Car and Roadster—Gear Noises Quieted and Cooling System Improved

Several improvements have been made in the mechanical details of the Moline-Knight car, built by the Moline Automobile Co., Moline, Ill., in bringing out the latest model. At the same time limousine, sedan and roadster bodies have been added and the price has been increased from $2,400 to $2,500 for touring car and roadster. The sedan costs $3,250 and the limousine $3,800. Wood wheels are standard and wire wheels $90 extra.

The equipment list is well filled, the car carrying one-man top with cover and inside attached curtains, automatic windshield, electric horn, Truffault-Hartford shock absorbers, Warner autometer, Stewart air pump, Bosch electric lighting generator and Moline-Wagner starter, 8-day clock, extension lamp, air and oil gauges, tools, jack, etc.

Instead of the three-speed gearset, built as a unit with the motor, used in the last model, a four-speed set with direct drive on third is mounted as a separate unit on a sub-frame in the roadster and touring cars. The result is greater car flexibility and a reduction of gear noises. The new construction has brought the control levers closer to the seat and has made an improved mounting possible. The third change is the adoption of spiral bevels for the final drive, which means a still further elimination of sounds, brought into notice by the quietness of the motor.

More efficient cooling of the motor, which has its four cylinders block cast, is attained by eliminating the exhaust manifold water jacket; the exhaust manifold is now a separate casting and is enclosed by an aluminum housing which, being of the same form as the intake manifold on the opposite side, preserves the symmetrical appearance of the motor.

Other changes of less importance have been made, including the adoption of Whitney chains in place of those formerly used for the auxiliary drives, the use of a screw and nut gear instead of worm and sector for steering, the substitution of the new Stewart single-cylinder tire pump for the type formerly installed, and so on.

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Dealer's Legal Status

Repair Man Not Liable If Chauffeur Collides With Another Car While in His Shop—Repair-Shop's Duty Begins When Delivery Is Complete

By Geo. F. Kaiser

The New York Court has decided that when a motor car owner tells his chauffeur to take a car to a repair-shop and have it painted and the manager of the shop directs the chauffeur to run the car upon an elevator and drive it into the paint-shop on the third floor, the repair man is not liable for injuries if the chauffeur runs into another car while driving off the elevator.

Driving Off Elevator, Chauffeur Injured Employe of Repair-Shop

A motor car owner directed his chauffeur to take his car to a repair-shop for the purpose of having it painted. The company occupied three floors of a building and the paint-shop was located on the third floor. When the chauffeur arrived he said he brought the car in for painting and asked "if he should take it to the top floor." He was directed to do so, and thereupon ran the car on the elevator.

The elevator was hoisted to the third floor and the car driven off about 6 feet away from the elevator and stopped while a space was being cleared for it in the paint-shop. At the end of that time the chauffeur cranked the car and, on starting it up collided with another car about 25 feet away and injured an employe of the repair-shop who was working on the other car.

Delivery Was Not Complete and Damage Suit Appeal Was Lost

The injured man sued the owner of the first car, and being unsuccessful in his action he appealed. The Appellate Division held that the owner of the first car should not have been relieved from liability, as was done, because the chauffeur had been authorized to deliver the car for painting and to operate the car for the purpose of such delivery, and the duty of the repair company did not begin until the delivery was made.

It further held that the contention of the car owner that the chauffeur was acting for the repair company from the time he stopped the car inside the building was not a good one, as it was up to the repair company to state where they would accept delivery of the car, and if they did not choose to receive the car until it was delivered in the paint-shop they would not be liable until they took custody there. (Zorn vs. Pendleton, 163 A. D. 33.)

Garage Responsible for Car in Its Care—Liable for Mis-delivery

When a motor car is placed in the possession and control of a garage keeper, he becomes liable for its care and custody. This liability does not end until the possession and control of the car is surrendered to the owner, or to someone whom the owner authorizes to take possession of the car.

Duty of Garage Proprietor to Redeliver Car to the Owner

As the purpose of the garage keeper's taking possession of the car is merely to hold it and care for it during the time he has control of it, and ultimately to redeliver it to the owner, he has no title to the car, except a sort of title which is vested in him by reason of its possession. During that time, however, his title is paramount to any claim except the owner's title.

It is the duty of the garage keeper to redeliver the property he has in his custody to the owner at the termination of the contract, and, if he makes a misdelivery, that is, delivers it to some unauthorized party, either through mistake or negligence, he is responsible for the value of the property so delivered. This rule applies to goods and property of the owner left with the machine, even though such goods are not covered by the express terms of the contract with the garage man.

The garage keeper is, in the great majority of instances at the present time, also the general repair man as regards motor cars left in his care, and annexed to most garages is a general repair-shop where not only are incidental repairs made, but cars are taken down, reassembled, overhauled and altered. In doing this work new parts and appliances are frequently rendered necessary and are added to the cars in the course of the repairs.

The relation of a garage keeper or repair man and his customer for whom the work is being done is, of course, a contractual relation, and, as has been stated before, the contract is necessarily made either between the repair man and the owner, or some other person who holds himself out as being responsible for the value of the work.

Chauffeur Has No Authority to Contract for General Repairs

In the ordinary case, a chauffeur has no authority to contract for general repairs on behalf of his employer and can only order repairs of a temporary character which will enable him to continue his journey when his car breaks down on the road.

A repair man is answerable for all defects which may arise either from want of skill on his own part, or on the part of his employes. The work must be done in accord with the contract under which it is undertaken and, even if it is not a written contract, there are certain obligations resting upon the repair man by implication of law that require the work to be done reasonably well. In other words, the work must be done with such skill and judgment as the undertaking requires and the workman is presumed to possess.

Owner Has a Legitimate Claim for Work That Is Not Properly Done

When a repair job is completed and it is found that the work has not been done in a workmanlike manner, or is defectively or improperly done, the car owner may set this up in a suit on the repair bill.

Road Builders To Meet in Chicago.

The annual meeting of the American Road Builders' Association, which will be known as the Fifth American Good Roads Congress and Sixth Good Roads show, will be held at the International Amphitheater, Chicago, Ill., on Monday, Tuesday, Wednesday and Thursday, December 14-17, 1914.

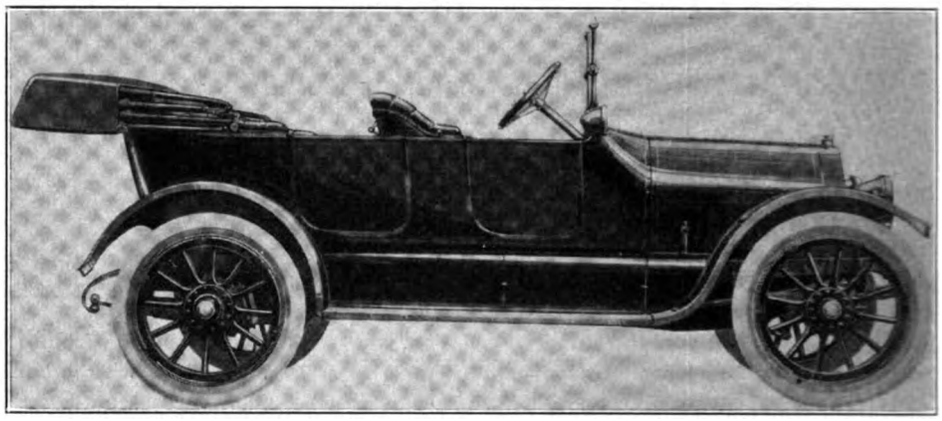
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Latest Model Overland Four Sells for $850

Second 1915 Car Has Electric Lighting—Starting

Slightly Reduced Cylinder Bore Chief Change.

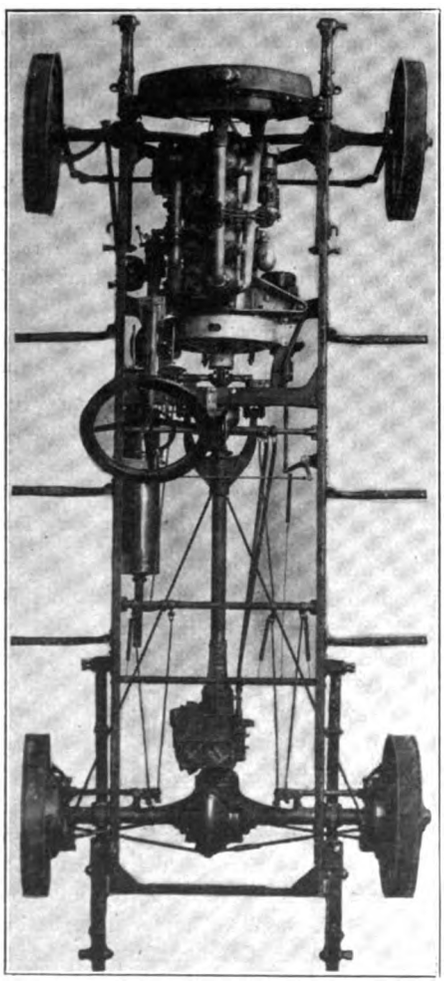
Touring, Roadster and Delivery Bodies Built.



Electric lighting and starting and full equipment are included in the price, $850, of the latest Overland

The second of the three 1915 cars to be produced by the Willys-Overland Co., Toledo, O., has appeared. It is styled model 81 and bears all the earmarks of previous Overland cars, the principal difference in the motor being that its bore is ⅛ inch less than in the new model 80. In the model 81 the motor dimensions are 4 x 4½, whereas in the model 80 they are 4⅛ x 4½.

In addition to the touring car, which lists at $850, with electric lighting and starting, the same chassis carries a roadster body of pleasing lines which is priced at $795 with the same equipment. An open express delivery car at $850 and a panel delivery car at $895 are also offered with this same chassis, both being fitted with electric lighting and cranking, and the equipment usual with such models.



The Overland has its gearset built as a unit with the rear axle

ESSENTIAL FEATURES OF OVERLAND MODEL 81

Price—	
Touring	$850
Roadster	795
Panel Delivery	895
Open Express	850
Color	Brewster green
Make of motor	Own
Number of cylinders	4
Shape	L-head
How cast	Single
Bore	4
Stroke	4½
S. A. E. horsepower	25.6
Magneto	High tension
Engine starter	Electric
Lighting system	Electric
Clutch	Cone
Gearset	3 speeds, selective
Wheelbase	106
Front tires	33 x 4
Rear tires	33 x 4
Wheels	Wood
Steering	Left
Control	Center
Make of axles	Own
Rear type axle	Floating

Equipment: Top, windshield, electric lighting and cranking, speedemeter, demountable rims, electric horn, robe rail, foot rest, tools, tire repair kit, jack, pump.

Cylinders are cast separately as heretofore, and the same general arrangement of the various parts, such as manifolds, valves and accessories is adhered to. The model 81 motor is amply powerful for the load it has to carry. The S. A. E. formula allows it 25.6 horsepower, although it will actually develop 30 horsepower. The stroke-bore ratio is 1.125 and the piston displacement 227.5 cubic inches.

Although the flywheel is not enclosed and the gearset does not combine with the engine to form the construction commonly known as a unit power plant, the motor is three-point suspended nevertheless. At the rear of the crankcase and just ahead of the flywheel there is an integrally cast arm extending out to and resting upon a diagonal frame member which in turn fastens at one end to the frame side member and at the other to the main cross member back of the motor. Thus the arms do not have to be long enough to extend all the way out to the side rails and are stronger. The third supporting point for the motor is at the center of the front where it rests upon a frame cross member.

The left side of the motor is given over to the valves, the manifolds, carburetter and generator. Both intake and exhaust headers must naturally have separate openings to each of the cylinders, the exhaust pipe passing above the intake. The carburetter has a hot air attachment. The exhaust manifold is made in two sections so that that portion serving the front two cylinders may be removed without taking off the entire manifold, or vice versa.

The crankshaft, which is carried on five main bearings in the upper half of the crankcase, is, due to this number of bearings and its size, very rigid and free from vibration. Pistons, each of which is fitted with three piston rings, are secured to the connecting rods by conventional wrist pins carried in the piston bosses. The camshaft is mounted on three bearings and like the crankshaft is drop forged from carbon steel. The valves are made with carbon steel stems electrically welded to 3½ per cent nickel steel heads and seat at 45 degrees.

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With this motor, the thermo-syphon method of cooling is employed. The radiator is a cellular type with vertical circulation and its shell is pressed from one piece of sheet steel.

Lubrication is maintained by a constant level splash system with individual splash troughs under each cylinder.

Ignition, which is entirely independent of the lighting and starting equipment, is provided for by a high-tension magneto located on the right forward side of the engine and driven by a shaft in connection with the timing gears.

As to the other electrical functions, the generation of current and the cranking are taken care of by separate units. The generator, which is mounted on the left front side of the crankcase on a bracket attached thereto, is driven by a silent chain from a sprocket on the front end of the crankshaft and just back of the fan belt pulley. Due to the difference in size of the sprockets, the generator operates at 2.6 times crankshaft speed. It begins to charge the battery at 8 miles per hour and at 25 miles an hour is producing its full charge of 14 amperes. Due to the reversed series coil, the output does not go above this amount regardless of car speed.

The starting motor is a compactly built series-wound machine operating on six volts. It is located at the rear of the motor on the right side, and acts directly on the flywheel, a sliding pinion on the electric motor shaft engaging with teeth cut on the rim of the flywheel. The ratio of the electric motor speed to that of the engine is 11.1 to 1.

The cone clutch used is leather faced and acts in the flywheel in the usual way, four springs holding it in engagement. Inserted in the cone face are spring-pressed studs to augment easy action, while a clutch brake stops it from spinning when thrown out. Back of the clutch there is a universal joint, which is on the forward end of the propeller shaft just ahead of the point where it enters the torsion tube. A substantial yoke hinging at its ends to the center frame cross member carries the front end of the tube. Diagonal radius rods run from this point to the ends of the rear axle.

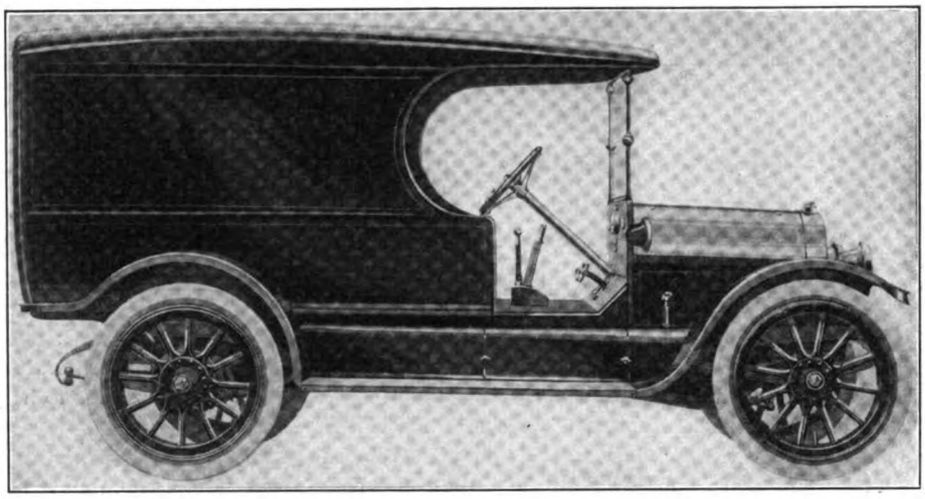
Through flanges, the gear box bolts to the torsion tube and the axle housing. It is compactly designed and affords the usual selectively obtained three forward speeds and reverse. The gears are of nickel steel and the shafts are carried on annular ball bearings.

The rear axle is of the Overland floating type. There are four differential gears; the axle shafts are removable and roller bearings carry the loads with ball thrust to take the end thrust. The brakes are mounted on the rear wheels and are of ample size, the drums being 10 inches in diameter by 2¼ inches.

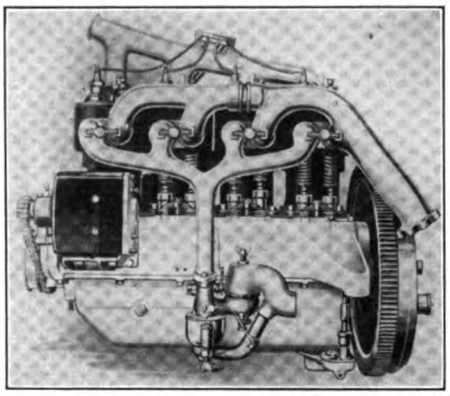
Springs are long and flat, the rear springs being slung under the axle with swivel seats, while the fronts are of the regular half-elliptic type. The dimensions are 36 and 46 inches, front and rear lengths, respectively, by 1¾ inches.

The wheelbase of the model 81 is 106 inches and the tread standard at 56 inches. The car carries 33 by 4 quick detachable tires on demountable rims. Wheels are wood. Steering is at the left.

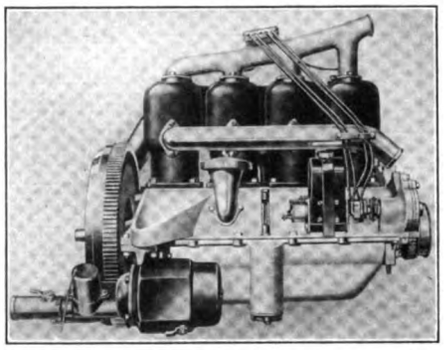
The body is a graceful smooth line affair, which is constructed with steel panels and doors, and wood frame. The cowl slopes to the bonnet in modern fashion and the instrument board has the various gauges and speedometer conveniently grouped and lighted by a dash lamp. The doors are of the front-hinged U form and their hinges are concealed. The fenders conform closely to the curve of the wheels and running boards are clear.



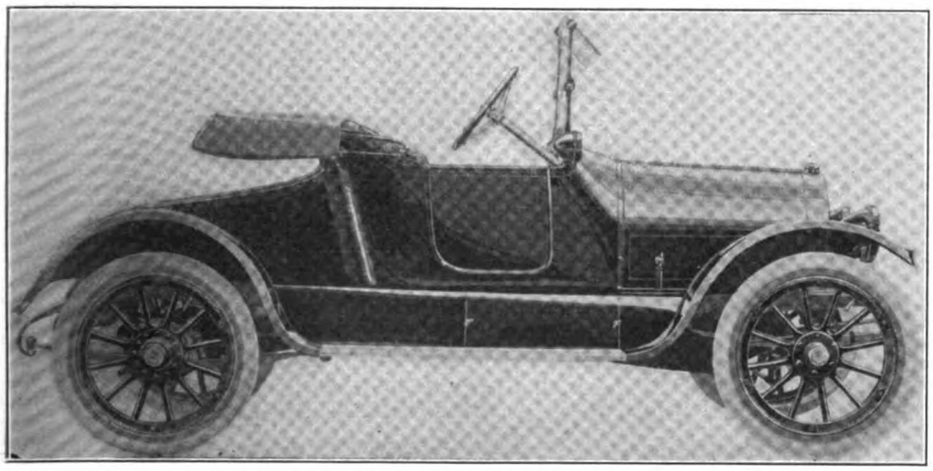
A panel delivery body on the standard chassis costs $895. With open express body the price is $850



The new Overland motor measures 4 x 4¼



As heretofore, cylinders are singly cast



With a roomy roadster body and the same full equipment as the touring car the price is $795. The lines are distinctly Overland

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Should Every Subdealer Buy a Demonstrator?

Of 25 Distributers, 18 Say Yes; 7 Say They Do Not Require It—Conditions Often Decide

Can a dealer sell without a sample?

He can, but it is not the best business, and the man without a demonstrating car can never be as successful as the dealer who owns a demonstrator.

There are many small subdealers in the United States who sell but a few cars a year and who do not feel that they can afford to buy a demonstrator. Many of them are under a large territorial distributer who plants the little fellows to help cover his field. The methods of working territory by a distributer vary; some require every dealer to have a demonstrator and some do not, but not one of them but agrees that to own a demonstrator is best.

Motor World asked this question of distributers in Boston, Kansas City, Minneapolis and Seattle; the replies indicate that on the average there are 25 per cent of distributers who do not make it a rigid rule that each dealer shall have a demonstrator—but they are all agreed that the demonstratorless plan is not satisfactory.

"They Stay Small Till They Do!"

About the only reason a subdealer might not want to invest in a demonstrator is that he is a small business man. To this the Northwestern Cadillac Co., Minneapolis, says, "They stay small until they do." And the Donovan Motor Car Co., which handles the Studebaker in the Boston territory, says, "If the subdealer is not financially able to invest in a demonstrator he is not an asset as a subdealer for a popular-priced car."

On the other hand, especially in the West where territories are large and it is not always possible to find a moneyed subdealer, it is recognized that while "no demonstrator" is not the best plan it is often the only feasible plan. Many of the Western distributers cover their territory through subdealers who do not invest in demonstrators, and the distributers regard it as the only way they can work. They cooperate and work closely with their subdealers. Demonstrating salesmen make trips through the territory, showing the car and helping the subdealers to close sales.

A common procedure in cases of this kind is for the subdealer to work upon his prospect with catalogs and literature and then call upon the distributer to help him close the sale.

"When they bring in a customer," says Dwight E. Morron, of the Gray Motor Co., Studebaker distributer in Minneapolis, "we go the limit in trying to sell him. We have him meet our manager, sales manager and superintendent, take him through the garage, shop and stock room and show him what we can give in the way of service.

Lack of Means a Handicap

"Lack of financial means to buy a demonstrator is very embarrassing to the subdealer; it is a serious handicap. A subdealer cannot do his best without a demonstrator. Sometimes he is up against it, but there are exceptions. We have one subdealer who has never had a demonstrator but sells a good number of cars; he has a large acquaintance, a strong personal influence and is very good in closing sales. It is a way he has and it is a good way. Such men are hard to find. A subdealer without a demonstrator is rarely ever satisfactory to us.

Keeps Road Men in Field

"We have salesmen driving a demonstrator, visiting all subdealers, keeping them lined up and helping them on the selling end."

"Few small country dealers can afford a demonstrator costing a thousand dollars or more," says the Barclay Auto Co., Chalmers distributer in Minneapolis territory. "They work from catalogs and finally bring the prospect in for a demonstration."

W. W. Munzer, of R. W. Munzer & Sons Co., which distributes the Hupmobile about Minneapolis, states that his company has from two to five men on the road all the time calling on dealers.

PURCHASE OF DEMONSTRATOR GENERALLY REQUIRED

Distributer	Car	Is Demonstrator Required	How Many Buy Demonstrators
BOSTON, MASS.			
Donovan Motor Car Co.	Studebaker	Yes	All
Name withheld	Withheld	No	Nearly all
Pope-Hartford Co. of Boston.	Maxwell	Yes	All
Studebaker Corp., Boston Brch.	Studebaker	Yes	All
Linscott Motor Co.	Reo	Yes	All
Name withheld	Withheld	Yes	All
Ford Motor Co.	Ford	Yes	All
Connell & McKone Co.	Overland	Yes	All
MINNEAPOLIS, MINN.			
Gray Motor Co.	Studebaker	No	75%
Barclay Auto Co.	Chalmers	No	50%
R. W. Munzer & Sons Co.	Hupmobile	Yes	All
Twin City Motor Car Co.	Hudson	Yes	All
Bowman & Libby, Inc.	Overland	Yes	All
Northwestern Cadillac Co.	Cadillac	No	Nearly all
F. E. Murphy Auto Co.	Lozier	Yes	All
KANSAS CITY, MO.			
Overland Automobile Co.	Overland	Yes	All
Thorp-Allen Motor Co.	Studebaker	No	50%
Chalmers Motor Co. of Mo.	Chalmers	Yes	All
Hupmobile Sales Co. of K. C.	Hupmobile	Yes	All
Bond Motor Co.	Maxwell	Yes	All
Buick Motor Co.	Buick	Yes	All
Greenlease Motor Car Co.	Cadillac	No	80%
SEATTLE, WASH			
J. W. Leavitt & Co.	Overland	Yes	All
H. L. Keats Auto Co.	Chalmers, Peerless and Saxon	Yes	All
TACOMA, WASH.			
Pacific Car Co.	Hudson and Packard	No	Small %

Total—Yes, 18; No, 7.

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When the weather is favorable they have demonstrating cars with them, but nevertheless each subdealer when he signs his contract is required to buy a car."

While the Twin City Motor Car Co., Hudson distributer about Minneapolis, requires every subdealer to have a demonstrator, two road men are kept in the territory aiding subdealers. Sales Manager E. C. Thompson states that this distributer signs up only those subdealers who have service stations and are able to buy demonstrating cars.

Customer's Car as Demonstrator.

An original plan is employed by subdealers of the F. E. Murphy Motor Co., Minneapolis, Lozier distributer. Very often a subdealer who has not the money to put into a demonstrator will permit a customer to buy a car at the subdealer's discount with the understanding that the subdealer may use it for demonstrating purposes. This gives the subdealer a demonstrating car without any investment.

The Overland Automobile Co., Kansas City, Mo., states that its experience has been that if a man has not been frugal enough or sufficient of a business man to accumulate enough money to stock at least one car he does not make a good dealer. "The best dealer in a small community is the man who has every one's respect, who is considered a good business man and has something back of him," says Sales Manager S. W. Ramsey.

"It is not possible in all cases, especially that of the small subdealer, for him to buy a demonstrator," states the Thorp-Allen Motor Co., Kansas City, Studebaker distributer. "It is, however, getting more to a point where men of larger means are selling cars, which makes it possible for them to own a demonstrator; working without one is not satisfactory." The Thorp-Allen subdealers also employ the plan of the Murphy subdealers of arranging with a customer for the use of his car for demonstrating purposes.

Subdealers under the Buick Motor Co., of Kansas City, are obliged to buy demonstrating models on the grounds that if they cannot they are not entitled to wholesale prices and are not legitimate motor car dealers.

The Greenlease Motor Car Co., Kansas City, Mo., permits its subdealers to work without demonstrators, and in this case prospects near the closing point are brought into the territorial center for a demonstration by the distributer. It is not a satisfactory arrangement but is the one employed.

Sell Demonstrators for List.

What bears indications of being an excellent plan is pursued by subdealers of the Pacific Car Co., which handles the Hudson and Packard in Tacoma and Southern Washington. Subdealers of this company seldom keep a car very long; it is used a short time for demonstrating purposes and is sold at list price as a new car. L. J. W. Jones, president of this company, states that the man who sells not more than five cars a year and handles this business as a side line seldom feels that he is justified in investing in a demonstrator the amount which would be required for a Hudson or a Packard.

A large distributer in Boston, who does not wish his name used, has 75 subdealers, and many of the smaller ones do not buy demonstrators. They work, in many cases, satisfactorily with catalogs, taking their prospects to the distributer when they regard it time.

Must Have One To Do Best.

"Yet, of course," the distributer states, "a subdealer cannot do his best work without a demonstrating car and we feel that the territory isn't producing as it should unless the dealer does have a demonstrator. Nevertheless such an arrangement is often the best we can make, particularly in the smaller towns. One of our dealers this year, with such help as we have been able to give him, has sold 15 new cars without a demonstrator."

"In nearly every case the man who cannot purchase a demonstrating car without crippling his business does not make a live subdealer," states A. A. Masters, sales manager of the Pope-Hartford Co. of Boston, which is Maxwell distributer. "In several cases where we have found it impossible to secure the kind of representation desired arrangements have been made with garage owners, they furnishing the names of prospective buyers and we doing the demonstrating and actual selling.

"There are a few garage owners who

The 25 Men Who Sell the Kissel in San Francisco



Front row, left to right—Geo. W. Hughson, C. C. Cryst, B. W. Hammond, manager Oakland branch; W. R. Boydston, W. G. Campbell, secretary San Francisco branch; R. Satterthwaite, J. H. Eagle, manager pleasure car department; S. S. Nerney, W. L. Hughson, president and general manager; J. M. Burge, P. S. Nichols, manager commercial car department; A. See, L. Cohen, E. J. Kane, R. T. Dawson.
Second row, left to right—A. B. Smith, N. Cowan, manager automobile supply department; N. S. Scotchler, D. E. Johnston, foreman repair-shop; H. W. Nerney, Geo. H. Hughson, F. R. Blodgett, C. A. Corcoran, R. Lanzit, J. R. Brown.

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Four Sizes of Announcement Used by Detroit Dealers



The Bemb-Robinson Co. (upper right) used a small sign inside the window with "1915" in a Hudson triangle on the window—The Regal dealer (upper left) made a bare announcement—The Oldsmobile (lower left) went more into detail—The Oakland (lower right) made a big display and covered the entire window, pending the arrival of its new models

have the perfect confidence of the people in the towns in which they do business and whose recommendation goes a long way toward the selling of cars. Very often he is unable financially to purchase a demonstrator. In our opinion it is very unsatisfactory to appoint a bona fide subdealer unless he is not only willing to purchase a demonstrating car but to get out and use it."

Subdealers under the Linscott Motor Co., Boston, Reo distributer, very often think they cannot buy a demonstrator, but the attitude of the company, and the result in each case, is summed up in its laconic remark, "It is good business and they find a way."

The Connell & McKone Co., Boston, Overland distributer, has very decided opinions on the subdealer without a car. It says, "If they cannot buy one they are useless."

Aside from requiring the purchase of a demonstrator, a few distributers insist that their subdealers shall also stock cars. Fifty per cent of the subdealers of the R. W. Munzer & Sons Co., Minneapolis, stock from three to ten Hupmobiles during a selling season.

"We not only insist that dealers buy a demonstrator but put up a deposit and contract for a certain number of cars, the number governed largely by the territory," states Sales Manager Ramsey, of the Overland Automobile Co., Kansas City. "Automobiles have reached a point where they are standard merchandise and there is no more reason why an automobile dealer should not carry a stock of cars than a clothing merchant should not carry a stock of clothing. A successful car dealer is bound to carry stock, as very frequently cars are purchased on very short notice and the fact that one can make immediate delivery influences many sales.

"Dealers are also required to buy cars during the winter months. This is due to the fact that our factory does not store any cars and manufacturers make cars in December and January as they do in April and May. Even if the factory were in a position to store cars it would be impossible to distribute them when the rush comes, as they experience a great deal of trouble in getting freight cars enough to move their regular output each month. It takes a little more time to get the right kind of dealer but there is always a larger profit in the end for every one concerned."

The Buick Motor Co., Kansas City, will not give a subdealer a contract unless he also gives on order for a carload for immediate shipment.

As to the method of making the subdealers acquainted with the cars when the new models are received by the distributer at the beginning of the season, the work follows two general plans; the subdealers come in to the distributer's headquarters or the distributer sends out representatives through the territory. The former plan is the more popular, but quite often both plans are combined.

In cases where the distributer does not require the subdealer to buy a demonstrator the percentage which buys them runs as low as 50 per cent, but an average is probably 75 or 80 per cent of the total number of subdealers.

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Be a Good Dealer But Also a Business Man

The Salesman Alone Cannot Always Succeed, Says Reilly—There Must Be Business Methods as Well

By Ray W. Sherman

REILLY was having a terrible spell of sit-still-and-look-out-the-window. He had tried and tried to concentrate on his work, but every time he tried his thoughts went fluttering. They didn't exactly flutter, they went out into space and stopped still. He had been working pretty hard lately and was going to take another week off next week, which probably accounted for that can't-do-a-thing feeling.

"Sick?" asked Tommy.

"No."

"Tired?"

"Afraid so."

"Fagged out a bit?"

"I guess so."

"Why don't you go home?"

"4 O'clock. Go Home"

"How? What?" Reilly started out of his reverie.

"It's 4 o'clock. Go on home."

Mechanically Reilly pulled out his watch, although there was a clock in plain sight on the wall.

"Humph! Guess I will."

He picked up his hat.

"Good night," said Tommy.

"Good night."

But Reilly didn't go home. Mrs. Reilly was in the country and an empty house was farthest from his desires. He wanted company, someone to talk to—or at. He wanted something stirring—bright lights, amusement—anything to get rid of that fog-in-the-head.

He moseyed down to the corner, stuck his toes over the edge of the curb and stood there. From his pocket he extracted a cigar and methodically lighted it. After several minutes of deliberation the Mathcroft Hotel loomed over his mental horizon and it seemed to disperse that brain fog, wherefore, having time in abundance, he began the walk of a mile to the hotel. He could eat anyway where there were lots of people.

Ben Doyno was in the same boat and he, too, had sought the Mathcroft, with its crowds of people. They agreed on the Empire Theater, and as they lighted their after-dinner cigars they both felt better. The fog was lifting.

"They tell me old Bastian is quitting the business," ventured Ben.

"Yes, I hear he's trying to get rid of the lease on his salesrooms; I think he'll have a hard time, though," replied Reilly.

"Why doesn't Guthrie take the location? He's always been kicking about about his location and wanting to get over into the row with the rest of you fellows——"



"He ought to get some business system injected into him"

"Huh!" exclaimed Reilly. "Guthrie wants to look out or he'll be looking for someone to take his own lease off his hands."

Not So Prosperous as He Looks.

"What do you mean?" Doyno demanded.

"From what they tell me," explained Reilly, "his checkbook is in bad condition. I guess he isn't so prosperous as he looks."

"So?" ejaculated Doyno. "Gee! That's news to me! I always thought Guthrie was doing a whale of a business!"

"He is doing a good business," returned Reilly. "But a good business doesn't necessarily imply that the bank account is growing."

"What's the matter with him. He's selling cars, isn't he?"

"Yes, he's selling cars, and he makes 20 per cent on every car, but he's running on the wrong system somewhere."

"Well," Doyno shrugged his shoulders and started a migration toward the hotel lobby, "that has been known to happen."

"Ayuh," puffed Reilly.

"Guthrie has always been considered a crackerjack salesman, hasn't he?"

"He is a crackerjack."

"What ails him then?"

Rotten Business Man

"Well," Reilly replied, "as near as I can conjecture, Guthrie is one of the many dealers who are tiptop salesmen and rotten business men. He can get the money in, but he can't keep it from going out."

"That's too bad."

"It certainly is. Guthrie has all the makings of a prosperous business, but he's slipping downhill financially. He can sell cars hand-over-fist. He has made a fine showing for a town of this size, and to an outsider he has all the earmarks of prosperity, but I have it pretty straight that he isn't as prosperous as he looks."

"What's a man like that going to do?" asked Doyno.

"That's a problem, Ben. I don't know. He ought to get some business system injected into his establishment somewhere, but just how or where I am not prepared to say. The ideal way is for Guthrie to get some business education or sense somewhere and keep his own finger on the business. Otherwise I should imagine he would have to get someone to do it for him.

"I had some trouble of that description when I first started in business. I

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had been educated along selling lines and I wasn't very strong on business. When I opened up I imagined all I would have to do would be to rustle around and sell cars and that everything else would take care of itself."

Doyno smiled. "And you found out different."

"You're right I did," returned Reilly. "I didn't have any more idea than a rabbit about business and I never actually knew where I stood. If I had money in the bank I thought I was making money, and if it got low I used to worry. Worrying was my principal means of checking losses. And if worrying didn't check them they didn't get checked."

Went to the Old Man for Advice

"What did you do?"

"I was hard up against it and I went right to the factory and asked for advice. I thought they ought to be interested in my success. I went right to the Old Man and laid my troubles before him, and he came to my rescue like a hero. He took me over to their business manager and told him to listen to my troubles and help me out. The business manager was just as kind as the Old Man.

"He stroked his chin very impressively, listened to all I had to say and then said he guessed he'd drop in on me some day, which he did. He looked over what few books I had, threw some of them away and told me to get more. Then we sat down and had a heart-to-heart talk. When we got through I knew more about business than I had ever dreamed existed. My eyes were opened.

Got a Bookkeeping Stenographer

"You must not think that I became a business man in one forenoon, for I didn't. I merely got started; got an insight, as it were. But it gave me the start I needed and things began to go better. I found a lot of little leaks and finally got things running on a better basis. As soon as I could I got a girl who understood bookkeeping and stenography. The stenographic work wasn't so much that she couldn't do the whole job and it took a lot of the business detail off my shoulders."

"Maybe that's what Guthrie needs."

"It certainly helps wonderfully. The business end of many a dealer's establishment could be taken care of by a good girl or a young man whose salary would be a good investment. I know of one dealer who was unable to see why he didn't make money and he called in a professional accountant and asked him to find out what was the trouble. The accountant discovered a lot of little leaks and stopped them. Thereafter he went over the books once a month and saw to it that the business was kept going along smoothly in the proper channel."

"That sounds like a fair scheme," commented Doyno.

Working Together Separately

"It pulled that man up, all right," replied Reilly. "He has been making money ever since. He doesn't do anything that doesn't show a profit. If some department isn't doing what it should he has the auditor investigate and suggest the necessary improvements."

"Don't you think it's hard on a good salesman who starts in business with no business experience and has to swing the whole thing alone?"

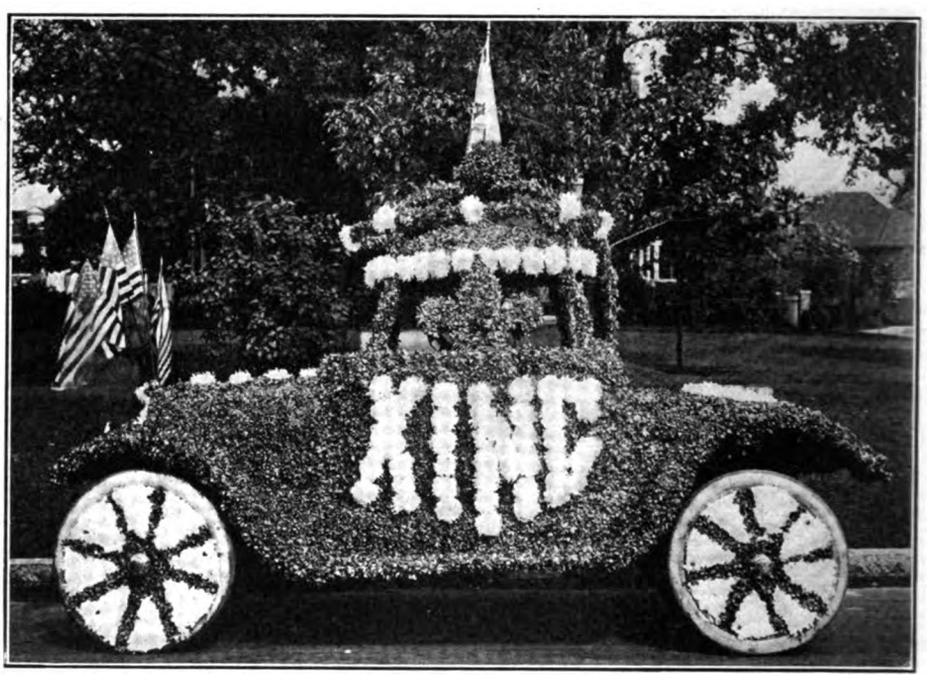
"Yes, it is hard. That's why there are so many excellent partnerships in this and every other business. One man handles the business end of things and the other the sales. They work together separately, as it were, and they generally make a success of it.

"And it would be just as hard, Ben, for a man who knew nothing but business to make a success of a venture that required sales ability. He would have his thumb on the profits and losses and would be able to find out that he wasn't making any money and why, but as to overcoming the shortage he probably couldn't do it alone. He would be just as bad off as the unbusinesslike salesman."

"Just as bad one way as the other, isn't it?" laughed Doyno.

"But I think the chances are in favor of the man who can sell. He is better able to learn business methods than the business man is to learn selling methods —and make a success of it."

Made G. A. R. Parade Advertise Car

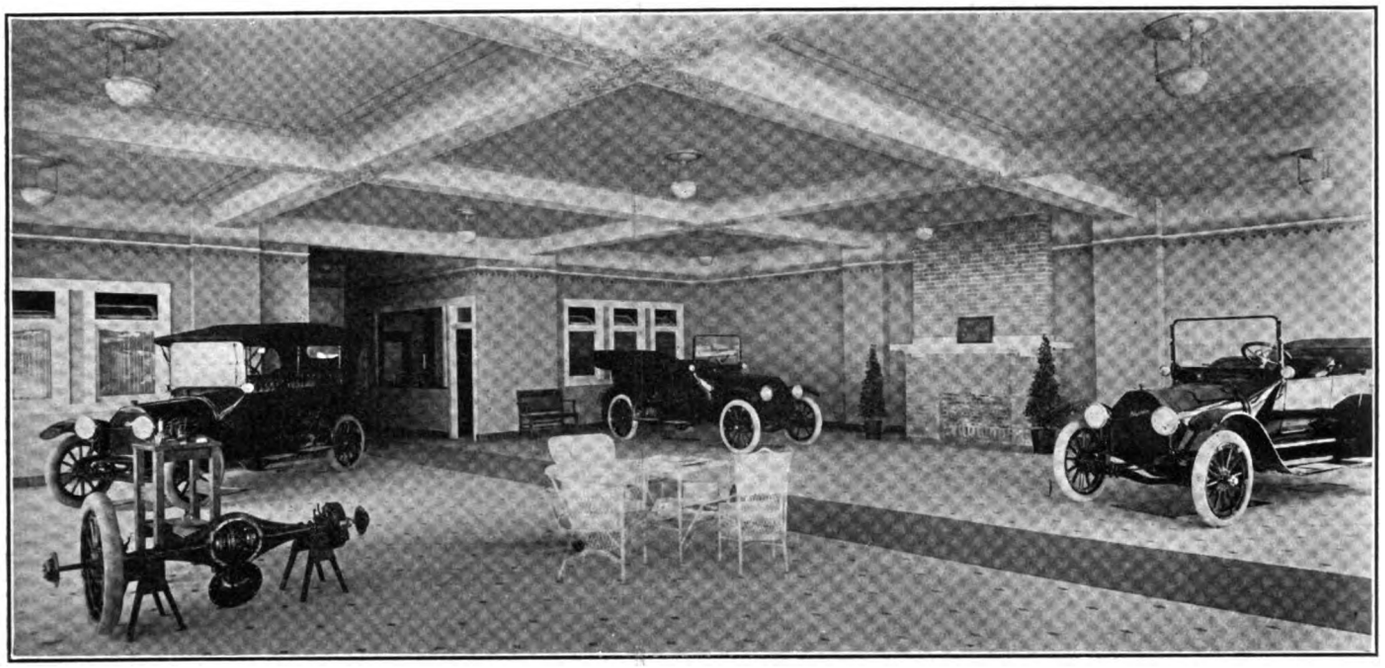


The King Motor Car Co., Detroit, Mich, thought that the G. A. R. parade, which was held September 2, was well worth the while to make a special display with at least one of its 1915 cars. The matter was taken up with Klausner, a window trimmer and designer of wide reputation, who thought the simplest and at the same time most effective and attractive display would be to decorate a car to represent the company's trademark.

A King roadster was chosen. The body was covered with red tissue paper trimmed with white paper, while the top covering the driver's seat was made of yellow and white tissue paper representing the crown of the King trademark. On both sides of the body were the letters K-I-N-G in white paper chrysanthemums, while on the front of the car the letters G-A-R were enclosed in a white paper chrysanthemum circle. The whole decorative display cost very little, yet it was one of the most effective advertisements seen in Detroit.

The car carried one of the veterans of the historical war and after the parade was placed on exhibition in the King's salesrooms on Woodward avenue.

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Tiled floor, easy chairs, semi-indirect lighting and a fireplace add atmosphere of cosiness

"COMFY" HOME FOR SAN DIEGO DEALER

Fireplace and Easy Chairs Features of Bateman's New Establishment.

Warner M. Bateman, Studebaker dealer in San Diego, Cal., has just moved into new quarters at 16th street and Broadway. The salesroom is 50 x 50 feet and has a tile floor. Semi-indirect lights are suspended from the ceiling by chains and the interior is finished in old ivory. A fireplace has been built into the west wall.

Large, comfortable chairs have been placed at the disposal of visitors, who have been invited to inspect the new building. Guides explain all departments to them.

The stock room is about 30 x 50 feet and carries a large supply of Studebaker parts for as early models as 1910. A complete line of two different makes of tires is also carried in stock.

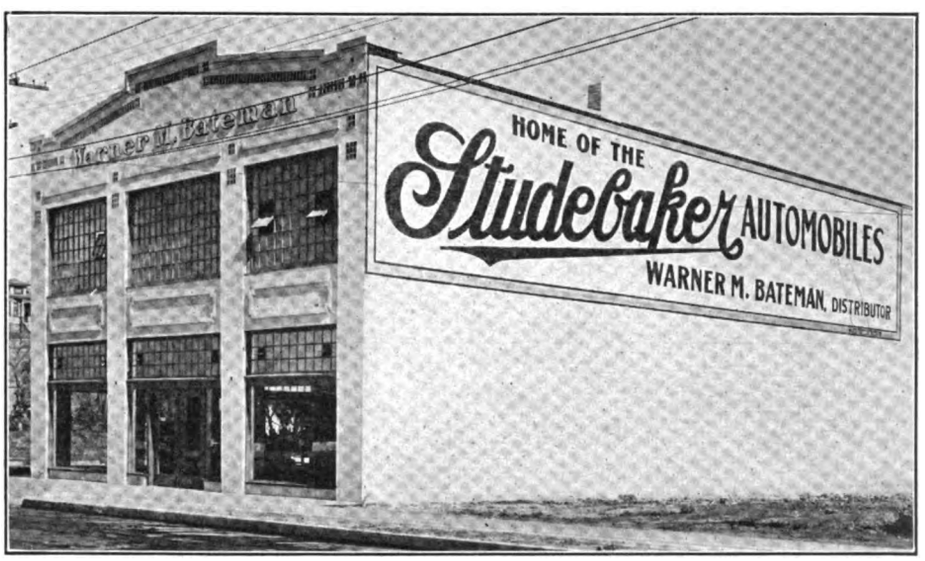
The shop is 50 x 150 feet and has up-to-date equipment. It is divided into two distinct divisions, the general repair department and the used car or rebuilt car department.

All rebuilt cars are repainted in the paint-shop, which is located on the second floor together with the shop. Two rooms are given over to painting. The floors of the paint-shop are dust proof as well as the ceiling above, so that the best work can be obtained.

At the rear of the salesroom is the regular garage, where cars are kept that are not in use. Here is also carried a stock of grease, oil and gasolene.



Large plate-glass windows face both streets—Windows are free from unneeded signs and lettering



The bare wall of this side is covered with a big sign that stands out and is visible for blocks

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Hokanson Wins 2 of 3 Wisconsin Tour Cups

His Buick Leads in Economy with 24.8-Mile Rate

Wins $1,000 Sweepstakes Cup —Six Draw for Third

Babcock Cinches Grip on Cup for Owners

Repeating his brilliant victory in the first Wisconsin reliability tour in 1910, Emil Hokanson, driving a Buick Model C-37, captured two out of three trophies in the fourth annual Wisconsin reliability-economy tour, run over a course of 508.8 miles, on September 7, 8 and 9, and might have taken the third cup but for the fact that six contestants drew lots for it. Case Sanger (Franklin), N. E. Osmond (Jeffery), E. S. Schank (Studebaker), N. E. Olson (Chevrolet) and J. Carey (R. C. H.) finished in the order named.

By averaging 24.8 miles per gallon of fuel, Hokanson won the Wisconsin Motorist trophy in the economy test, and with a score of 2,995 out of a possible 3,000, was awarded also the Milwaukee Sentinel $1,000 sweepstakes cup. The Milwaukee Free Press trophy, for best road score, was awarded to E. D. Shank (Studebaker), the decision being made by drawing lots because all contestants finished with perfect road scores.

In the private owners' division, John D. Babcock, of Milwaukee, driving a 1911 Franklin, won over Henry O. Stenzel in a White, and becomes permanent possessor of the Emil Schandein trophy by virtue of having won the cup three times. Stenzel has been Babcock's competitor in this division since 1911 and tied the Franklin in 1912. This division was run under Grade 3 rules of the A. A. A. and Babcock finished with a perfect score, while Stenzel suffered 31 points penalty for taking on water between controls and for work on water connection.

The 1914 Wisconsin state tour was without doubt the most important run of the kind staged in America this year. The addition of an economy test made it the most important tour ever held in the country, for reliability has long since been proven, while economy has until now been guesswork.

The tour was changed from a non-stock event, which the A. A. A.'s sanction called for, to a stock-car event, by mutual agreement among entrants. The W. S. A. A. became its own judge of what constitutes a stock car. The agreement [in part] signed by all entrants was as follows:

"'A stock car shall be any automobile of a given model on sale through all the regular selling representatives of the manufacturer thereof during the period of its production, of which model the manufacturers' output shall exceed twenty-five (25), and the same shall, in every detail and complete equipment, comply with the manufacturers' advertised catalog specifications of such car without omissions, additions, substitutions, reinforcements, cotter-pinning or other method of locking nuts, bolts or other parts of such car in any manner other than as placed on sale in the hands of the selling representatives by the respective manufacturers.'

"We hereby jointly and severally agree, for like considerations, to submit our respective cars entered in said tour, for preliminary examination by the technical committee appointed by the W. S. A. A. for such purpose, to determine if such are 'stock cars' in the meaning of the above definition, and further agree to abide by the decision of such technical committee, hereby authorizing said technical committee to reject any car not a stock car strictly in compliance with the above definition."

FINAL SCORE

Driver and Car	Road Score	Gas Economy Score	Technical Exam.	Final Score
E. Hokanson, Buick	1,000	1,000	995	2,995
Case Sanger, Franklin	1,000	985	997	2,982
N. E. Osmond, Jeffery	1,000	979	997	2,976
E. S. Schank, Studebaker	1,000	968	997	2,965
N. E. Olson, Chevrolet	1,000	978	964	2,942
Jim Carey, R C H	1,000	949	841	2,790

FUEL ECONOMY TEST

Entrant and Car	Price	Weight	Gallons Used	Miles per Gallon
Hokanson Auto Co., Buick	$1,235	3,819	20.5	24.8
Reeke-Osmond Motor Co., Jeffery	1,450	3,934	27.0	18.8
Sanger Auto Co., Franklin	2,150	3,810	24.0	21.2
Creek Motor Co., R C H	1,000	3,074	33.5	15.2
Wolleager Auto Sales Co., Studebaker	985	3,299	26.0	19.6
Olson-Pauly Motor Co., Chevrolet	860	2,684	18.5	27.5

TECHNICAL EXAMINATION

BUICK—Loose nut on horn wire clip	1
Front floor board loose	1
Two loose radiator bolts	2
Steering column nut loose	1
Total	5
JEFFERY—Loose screw in hood	1
Screw in speedometer lost	1
Gasolene leak in filler spout	1
Total	3
FRANKLIN—Nut loose	1
Windshield nut loose	1
Left front spring clip loose	1
Total	3
R-C-H—Left rear axle shaft broken	100
Lost gasket in radiator	1
Footbrake equalizer spring broken	1
Body iron for top, nut loose	1
Right top rest loose	1
Spring sag, ¼ inch	1
Brake test, emergency	25
Brake test, service	25
Total	155
STUDEBAKER—Oil plug on rear universal joint loose	1
Both top rests loose (2)	2
Total	3
CHEVROLET—Lost nut, light wire clamp	1
Right rear spring sag	10
Cracked water jacket	36
Total	47

As is shown by the table of technical penalties, not one car came through the exacting final examination with demerit. However, it can readily be seen that the majority of penalties thus assessed were of a minor character.

Each contestant started with a credit of 3,000 points, divided into three sets of 1,000 points each, as follows: Road score, technical score and economy score. The winning Buick lost only 5 points, which were assessed in the final examination, but for minor faults. The Franklin, Jeffery and Studebaker lost only 3 points each in the final inspection. The Chevrolet, which went into the technical committee's hands with a small fracture in the water jacket, was assessed 36 points for the fault, which was aggravated by the 500-mile run. The R. C. H. suffered the heaviest technical penalties, being listed for a deduction of 155 points from its 3,000, for a net 2,790. The left rear axle shaft was broken, causing 100 points, and both sets of brakes failed to come to scratch, causing 50 more points penalty.

Fuel economy was determined by dividing the total weight of the fuel consumed on the entire trip into the weight of the car, including passengers, drivers,

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observers, tools, equipment, and everything complete as the car went over the roads in the tour.

The total mileage recorded by the pacemaker's car was taken as the official mileage of the tour. Although the route called for 481.6 miles, the pacemaker showed a distance of 508.8 miles, which was due to numerous detours around road building gangs which began their work after the pathfinder completed its work of routing the tour.

The minimum average speed requirement on all cars throughout the three days' run was 18 miles per hour. In past tours small cars have been asked to average 16 miles and large cars 18 miles per hour.

The route was through the most thickly populated sections of the state. On the first day the cars traveled along the west shore of Lake Michigan as far as Algoma and then cut over to Green Bay, 161.8 miles. On the second day the tour passed through the prosperous Fox river valley as far as Fond du Lac and then cut over toward the west to Madison, the state capital, 152.8 miles. The last day's trip from Madison to Milwaukee was by a circuitous route. The shortest distance by road between the two points is 90 miles, but the route of the tour was nearly 178 miles, going by way of Janesville, Beloit, Burling, Kenosha and Racine. The roads were uniformly good and there were stretches of tar macadam and concrete of 5 to 10 miles each, which enabled the cars to make excellent time. The pilot car, a White six, for instance, averaged 32 miles per hour for the last day's run.

The tour encountered no rainfall throughout. The weather on all three days was raw. Especially on the first day participants were uncomfortably chilly, the route being along the lake shore. Rains preceded the tour, however, and there were many bad spots in the roads.

The tour was so successful that officials of the state association believe they can hold a fifth run in 1915. This will probably be an economy run exclusively, although reliability may be retained as a factor in the final reckoning. There are many dealers who would have entered this year's tour if arrangements could have been made to make frequent lengthy stops so that the dealer might get some benefit from showing his car to the public, but it is obvious that such stops would seriously disarrange schedules and permit of no demonstrations.

It is generally realized that the plain reliability tour, as such, is a thing of the past, because people know the motor car of today is a reliable machine and ought to make a trip of 3, 4, 5 or 6 days, or even two weeks, without trouble. Fuel economy, however, is an important thing, and future tours will be certain successes if the main desideratum is how far a car can travel on a gallon of gasolene.

Hupmobile Owners Rally 'Round Reiss

Nearly 200 Cars Parade From New York to Coney Island in Dealer's Reunion—Guests Number Nearly 600—Dancing Contest for Cup

Nearly 600 Hupmobile owners and their guests met Chas. E. Reiss, New York city Hupmobile distributer, on Wednesday afternoon last, and every one of them now thinks more of Reiss—and his establishment—than ever before. It came about in this wise:

Reiss promoted a Hupmobile owners' reunion. From every corner of Greater New York, from New Jersey and Connecticut, and at least in one instance from as far away as California, Hupmobile owners came in droves to partake of the Reiss hospitality—and above all to see the new 1915 Hupmobiles which formed a conspicuous part of the demonstration.

To show the new models was one of the principal reasons for the reunion; and to permit not only Reiss himself, but every one of his capable staff to become better acquainted with Hupmobile owners was another excellent reason for the gathering.

That the reunion was a success almost goes without saying, for Reiss is universally well liked and the owners of Hupmobiles, perhaps to a greater degree than the owners of any other make of car, appear as one great big family.

There were about 187 cars in the big parade which formed at 130th street and Riverside drive, and every car was loaded to capacity. There were Hupmobiles of every vintage, from the very earliest to the latest 1915 models. Reiss himself rode in one of the new cars at the head of the procession. Every car was decorated with Hupmobile banners bearing the words "Welcome 1915 Hupmobile."

From the starting point the procession wended its way down Broadway and over the Williamsburg bridge to Bedford avenue in Brooklyn, where another delegation of Hupmobile owners was in waiting to join the band. The destination, the Hotel Shelburne, Coney Island, was reached via the Coney Island Boulevard.

At the hotel Reiss's guests were lined up for the benefit of the photographer and the crowd then repaired to the inner rooms, where a banquet was spread.

The banquet itself differed from others of its kind. There was no speech-making of the long-drawn-out, cut-and-dried kind. Instead, Reiss welcomed the Hupmobile owners in scarcely more than a dozen words and presented Chas. E. Buck, who had traveled all the way from the factory in Detroit to attend and who acted as master of ceremonies.

Following the banquet there was a prize dance for a tall silver cup presented by Reiss. This was won by Dr. H. H. Taylor, dancing with Miss Nockler. Dr. Taylor has been a Hupmobile owner only about six months.

The gathering was distinctive by reason of the number of professional persons—all Hupmobile owners—who were present. Among them were Montgomery and Moore, who assisted in the entertainment; Miss Nell Bergen, Albert Parker, Jack Pierre and Hale Hamilton.

Mitchell Heads E. V. A. Section

A St. Louis section of the Electric Vehicle Association of America has been organized. C. E. Mitchell, of the Union Electric Light & Power Co., has been elected chairman; F. E. Stevens, of the Stevens-Waverly Auto Co., vice-chairman; H. V. Marshall, of the Exide Battery Depots, Indiana, secretary. Other members are: Ralph R. Doak, Woods Electric Vehicle Co.; Louis Goodhart, Milton B. Strauss and Dwight B. Blossom, of the Electric Garage & Service Co.; Harry S. Turner, Mississippi Valley Automobile Co.; C. A. Irving, Rauch & Lang Garage; Harold G. Brouster, Rauch & Lang St. Louis Co.; Dr. Melcher Ekstromer, General Motors Truck Co.

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Woods Mobilette a $380 Car

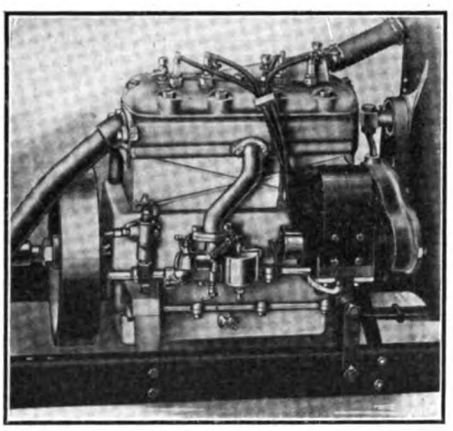
Four-cylinder Block Motor, Shaft Drive and Full Floating Rear Axle Used Two Body Types

In bringing out Model No. 3, which is the latest edition of the Woods Mobilette, the International Cycle-Car & Accessories Co., 1509 Michigan boulevard, Chicago, has produced a machine that, while a development of the previous model, is vastly different and has been improved in numerous respects, not the least of which is the appearance. Tandem seating, side doors, narrow tread, four-cylinder motor and other characteristics are retained. The machine has the appearance of a big car on a small scale. The price is $380 with standard equipment of oil side and tail lamps and set of tools; for $15 extra a top and windshield will be added, and for $25 a top, windshield, gas headlights and Prest-O-Lite tank.

The motor is water-cooled by thermo-syphonic circulation and has its cylinders cast in a block with valves on one side; the bore and stroke are 2½ x 3½, giving an S. A. E. rating of 10 horsepower. The cylinders are cast integral with the upper half of the crankcase and have a removable one-piece head. Ignition is by Berling high-tension magneto. The motor is suspended at three points. Lubrication is by splash with pump circulation. The carburetter is controlled from the dash and is fed by gravity from a five-gallon tank under the dash.

The transmission system includes a two-speed sliding gear mounted as a unit with the rear axle, a cone clutch in the motor flywheel and a floating propeller shaft running through a torque tube; ball bearings are used throughout the gearset. The rear axle is of the full floating type, the wheels running on the hollow spindles on radial bearings. Conventional design is embodied in the one-piece drop-forged front axle and the steering elements.

A high kick-up at the rear end carries the frame well above the rear axle, giving ample space for the full elliptic springs, while the front end passes under the front axle, bringing the center of gravity low. The lower members of the rear springs are underslung, while the front springs are overhung. The steering gear includes a worm-and-gear.



The four-cylinder block motor has a removable one-piece head and is three-point suspension

Standard practice is followed in mounting the brakes on the rear wheels, the drums being 8 x 1¼; the service brake is pedal operated while a lever controls the emergency brake.

Wheels are of wire, fitted with 28 x 2¾ clincher tires, all non-skids. The wheelbase is 102 inches, the tread 36 inches and the road clearance 10 inches, which is more than ample for all ordinary conditions.

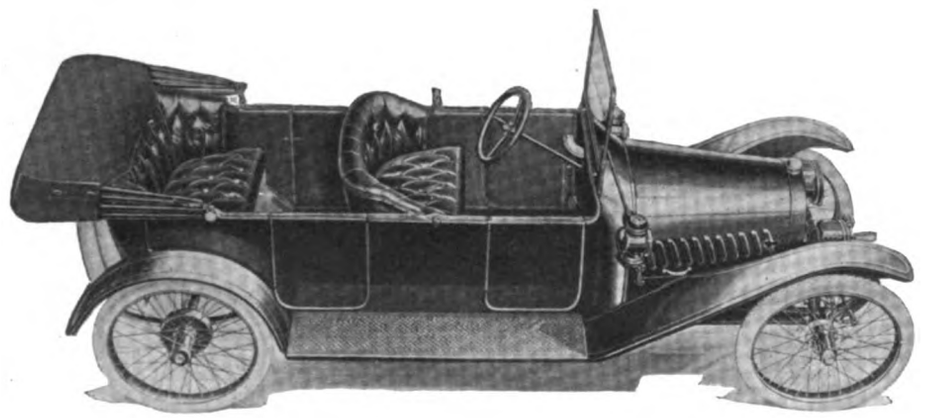
Sheet metal construction is used for the body, which is of the conventional type and has a neatly tapered hood, moderate cowl housing the gasolene tank, wide fenders and long running-boards. The seats are comfortably cushioned and afford plenty of room for two passengers, who ride tandem; there is excellent leg-room, also. The rear seat is sufficiently large for an adult and a child. The standard body can be replaced by a semi-convertible body, in which the rear seat can be removed, leaving the back part available for use for commercial purposes. This body involves an extra charge of $10.

WOODS MOBILETTE SELLING FEATURES

Price:	
Touring	$380
Delivery	380
Number of cylinders	Four
Shape	L-head
How cast	Block
Bore	2½
Stroke	3½
S. A. E. rating	10
Magneto	Berling
Lighting	Oil
Clutch	Cone
Gearset	2-speed
Wheelbase	102
Tread	36
Wheels	Wire
Tires	28 x 2¾
Steering	Center
Control	Center
Type of rear axle	Full floating

Equipment: Three oil lamps and set of tools.

Extras: Top and windshield, $15; top, windshield, gas headlights and Prest-O-Lite tank, $25.



In the rear seat there is sufficient room for an adult and a child. A convertible body can be used when the car is used part of the time for delivery work

Columbus Show Draws Protests.

The Columbus Auto Trades Association, an organization composed of agents in central Ohio territory, has adopted resolutions in the form of an untimatum to the board of managers of the Ohio State Fair. The ultimatum protests against the charging of an admission of 50 cents for each and every one connected with motor car exhibits, without pass out checks, and also against the location of the displays. It is claimed that many of the displays were placed near stone crushers and thereby ruined by the dust. The roofs of buildings leaked and damaged cars on exhibition also. It was agreed that no displays of automobiles be made by Columbus dealers at the next state fair unless the conditions were remedied.

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Frown Upon Bargain Methods

Majority of Dealers Say No Good Can Come From Cutting Price of a "Leader"—Better Methods Offered

BARGAIN HUNTERS BUY ONLY AT CUT-PRICE

Boston Man Says Cut-Price Sales Make Enemies—But Offers "Leaders"

Strong and to the point is J. G. MacCormack in his condemnation of the cut-price specialty in the accessory business. MacCormack is a member of the firm of the Puritan Motor Supply Co., Boston, Mass. He says:

"Damnation of the Business"

"It's the damnation of the accessory business.

"It sets a price, and you either have to leave the object at the bargain price or lose trade.

Will Make Enemies

"The average man who will respond to an advertisement of a cut-price article has little to spend and has a mighty long memory. The man to whom you sell, say, a jack at 39 cents, may come back after another some time later, and when you tell him that he must pay a higher price than 39 cents you will find you have made an enemy. You can't explain, for he won't listen.

Will Buy Nothing Else

"The bargain hunter will come to your store and will buy just the cut-price bargain and nothing else. It won't even pay to try to sell that sort of people anything else from your stock. You can spend three hours of valuable time in the effort, but the sales won't pay. The man has come for something cheap, and it is only something cheap that you can sell him.

Offers Better Scheme

"Here is a scheme that I have had success with, however: I offer a specialty each week. It isn't a cut-price specialty, but something that I sell at a reasonable price—something that I may have that the other dealers may not have. I call attention to the fact that I have a special make of hammer that I am specializing on for the week—something on which I make a small margin of profit, but not a cut-rate profit.

Offers Something Needed

"People have hammers brought to their attention, and those that need them will be brought to my store, not because it is a cut-price bargain, but because they have had it called to their attention that they need hammers and that we have them to sell at a reasonable price. Those people may need something else, and we can sell those goods to them.

Does Not Believe In Cut Price

"No, sir! I don't believe in the cut-price bargain offer. I don't think it is legitimate selling. I don't think it is right. I have tried both schemes, and believe me, the one I have just mentioned above is the better."

DEALERS SHOULD STICK TO LIST PRICES

Kirby Says They Are Virtually Forced by Competition to Cut

Frederick B. Kirby, manager of the Charles H. Turner & Co., Albany, N. Y., which handles a big line of accessories, is also opposed to price-cutting on automobile supplies, but he says:

Does Not Approve of It

"While I do not approve of it yet there is a lot of it being done. New York houses have flooded the local trade with catalogs, offering, for instance, spark plugs at 39 cents each. The catalog price is quoted at $1.

What Is a Dealer To Do?

"Now what is a dealer who sticks to the price the manufacturer puts on the article and who gets his goods from a jobbing house going to do when up in the next block he can buy the same spark plug he is asking $1 for for 39 cents?

READ THIS FIRST!

"Department stores have 'leaders' from time to time which serve to direct attention to their goods," said J. K. Marston in a letter published in Motor World Sept. 2.

"And when a man gets to the department store and buys one of the 'leaders' he is almost certain to see many other articles he desires.

"Why cannot an accessory house work on the same plan and be just as successful? There is no reason in the world.

"Supposing you sell spark plugs for 29 cents and perhaps make only a cent or two profit—perhaps lose a cent or two on each one. What does that amount to? You draw the motorist to your place of business by the special offer and then by having your goods enticingly displayed you are sure to sell him many other articles of merchandise at regular prices."

This is the plan that Marston advocates. Is it a good one?

Last week, five dealers in Detroit, Atlanta, Ga., and Albany, N. Y., condemned it. They say it is wrong in principle.

Two dealers in Boston and Atlanta said it is right.

Read these opinions and tell us what you think.

"It would be perfectly fine if the dealers would all sell goods at the standard prices and not cut the rate on anything, but it isn't done.

What's the Use?

"The man who does cut, gets much of the business, and the fellow who sticks to principle loses.

"What's the use?"

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WIDE-AWAKE MERCHANDISING

INSTANT ATTENTION TO ALL SHOULD BE SALESROOM RULE

If You Do Not Get Busy the Minute Someone Walks Into Your Place of Business You May Lose a Sale—One Man Walked Right Out Again

The office of the garage was right in front. It took up one side of the show window. The customer—or, rather, the prospective customer, could see that the boss was in as he passed by on his way to the office. This possible buyer was a modest man of the quiet, determined type.

He went to the office door and looked in. The boss was talking to another man. Both were in their shirt sleeves. The other man may have been an employe or a customer. The boss looked up at the modest man, who stood framed in the doorway, and then continued his conversation.

Every One Passed Him By

It was undoubtedly a very interesting conversation. Some parts of it were amusing, because both laughed freely. A stenographer walked by the man in the doorway and came out again going to another office across the way. Her business was writing letters, so she did not waste time asking the strange man to have a chair or anything else. Five minutes went by, then ten, and the man modestly waited. The boss was still talking.

The embryo buyer waited no longer. Instead, he retraced his steps up the street, determined that whatever car he bought it would not be one handled by a loquacious dealer. This happened in a Michigan town, just a few weeks ago. It might have happened in many places. But most dealers are getting too alert for business to allow a strange man to come in and go out without finding out what he wanted or at least greeting him.

It is well that salesmen are having the value of instant attention impressed upon them. But there are still altogether too many places where the lesson is yet to be learned.



Between seasons, when Bowman & Libby, Inc., Minneapolis dealer in Overlands, has no cars it makes use of its broad show windows in this way. On one side a sign tells what was done during the previous season; on the other side the announcement calls attention to the delivery date of the new cars and tells the plans of the company for the coming season. As soon as the new cars are received the signs are removed and the windows decorated in an artistic manner every week

BIG PRINCIPLES NEED BIG SPACE

Knowledge of Details Essential But Familiarity Stifles Initiative.

Don't spend time trying to discover what other men have discovered for you.

Study their works and let your energies begin where they left off.

Electrical engineers of today do not begin their life work by proving that lightning is electricity—Franklin did that for them.

Knowledge of details is essential—but familiarty with them is a parasite that stifles initiative and thwarts accomplishment. Big principles need big space. They cannot thrive in soil that is choked with non-productive weeds.

And what is knowledge but the accumulation of thoughts that are going to help us with our work and the elimination of thoughts that can be of no use at all. Pick well your path. Know where it leads and give your mind to thoughts that make the journey easy.

These are my by-laws—take care of them and they will take care of you.

—From the Hupmobilist.

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Service Means A Square Deal

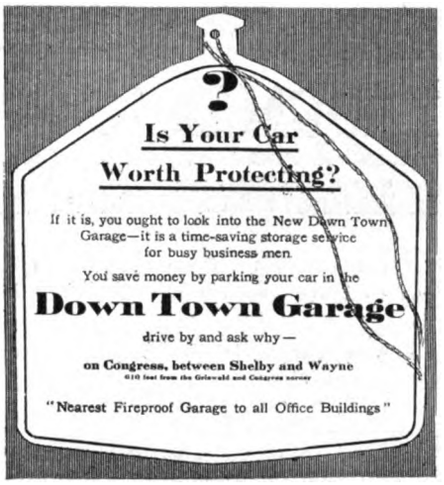
Has No Repair-shop But Goes Limit In Helping Owners—Get What Is Paid For

The Adrian Auto Sales Co., Adrian, Mich., does not sell gasolene or supplies, nor does it garage or repair cars. It devotes itself exclusively to selling Studebaker and Saxon cars—and sells them, too. Also, it gives service.

"Even though we have no repair-shop we give service. We have one man who is a wonderfully good car mechanic. If any of the drivers of our cars get into trouble anywhere we go after them and help them out—and do it quickly. Today a man jammed his radiator 20 miles out in the country. He telephoned us this morning and in a few minutes a man will be on the way to put in a new radiator," says Manager Million.

Customers Never Unreasonable

"That is what we call service. The customer buys and pays for the car, believing that he will get a square deal. We see that he gets it. Our customers are never unreasonable. We go the limit to keep their cars in good running order and the fact that we are giving a very practical helpful sort of service is proving a strong help in business."



ANNOUNCES OPENING WITH RADIATOR CARD

Printed in Two Colors and Attached to Every Car—Proved Business Getter

The "Down Town Garage," a new enterprise recently started in Detroit, announced its opening in the newspapers and then followed it up by attaching the radiator-shaped announcement shown herewith on the steering wheels of thousands of cars parked on the down-town streets of Detroit.

It is common to find cards and circulars in your car. But usually they are cheap in form and unattractive in appearance. Often they fall on the floor of the car wrong side up and you don't bother to even look them over. Here was something different—and it proved a business-getter.

Ad Literature Is Sales Seed

Keep Up Live Mailing List and Sow Seed in Fertile Soil—Absorb the Idea

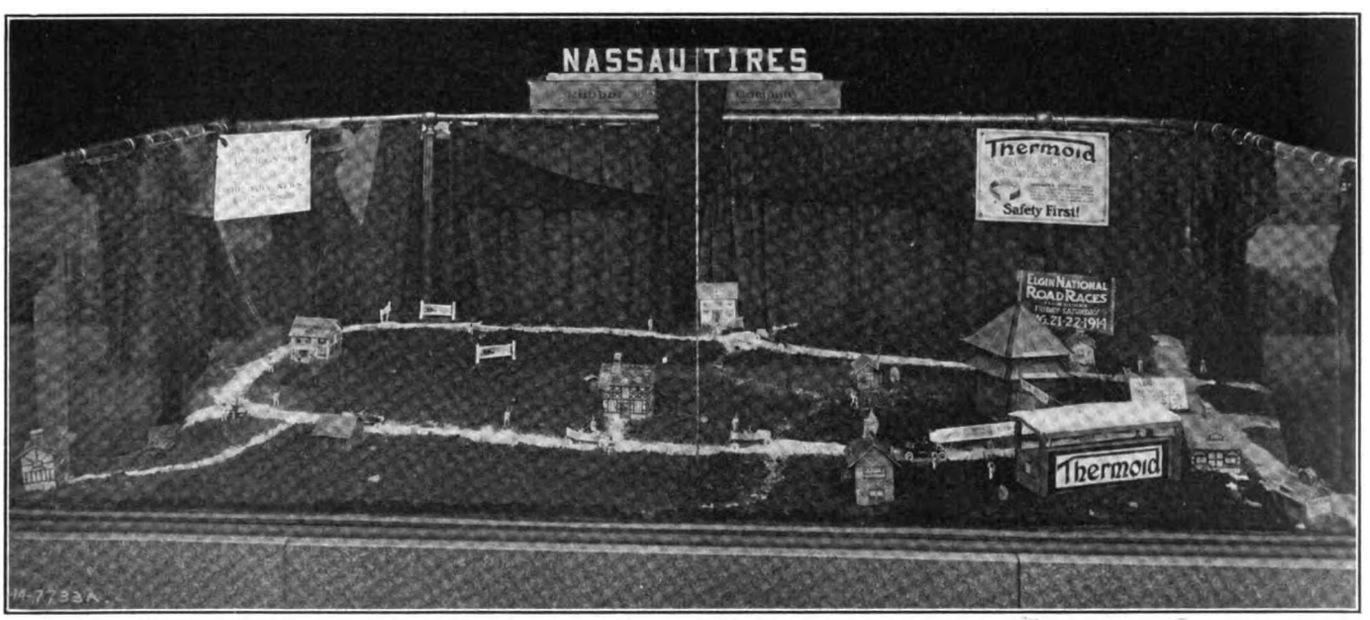
"Advertising literature is sales seed," says a dealer who knows.

"We don't expect the advertising we do to make sales for us, but we do know that it paves the way and it brings people in here and gives our salesmen a chance at them. Furthermore, it predisposes people in favor of our cars, so that the salesmen do not have to go so deeply into detail and it keeps our name before them. That is why we use a mailing list, keep it up to date, and mail every piece of good advertising matter that comes to us from the factory to live prospects."

Get Advertising Into Mails

The minute you absorb that idea the advertising matter ceases to gather dust on the showroom table or underneath the stationery pile, and instead gets into the mails, on the way to the man it was written for.

The salesroom table may be a good place, but a much better place is the home of a possible customer. Plant the sales-seed—and plant it while it is fresh and has the germ of life still in it—if you would reap any benefit from it.



The Thermoid Rubber Co.'s Chicago branch took advantage as no other dealer did, of the pre-race interest in the Elgin road classics. The Elgin race course was reproduced in its window and it attracted continuous attention. The display cost in the neighborhood of $10, expended for tin soldiers, miniature motor cars, houses, etc. The space occupied was 5 x 12 feet. The first move was to spread real soil two inches deep over the whole window space; then genuine grass was "planted"; one day's work finished the display

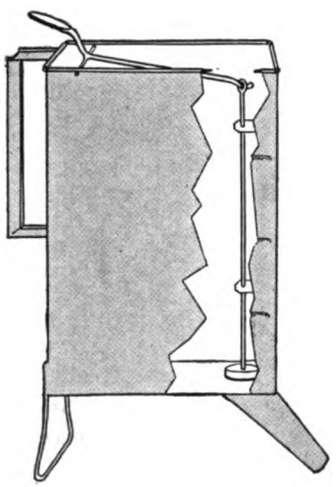
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RECENT DEVELOPMENTS in ACCESSORIES

Handling Oil Without Slopping

Slopping and spilling of lubricating oil when filling oil containers is obviated by the use of an oil filler that is manufactured by the No-Shammy Products Co., Cleveland, O.

The "half and half," as it is designated, consists of an oil receptacle with a handle at one side and a spout at the bottom, the opening into the spout being controlled by an interior valve kept closed by a spring and opened by pressure on a thumb-lever near the handle, so that but one hand is needed for the purpose. The container is graduated so that any desired quantity of oil can be used. The method of using is to put in the requisite quantity of lubricant, insert the spout in the opening of the oil receptacle on the car and press the button. When the button is released the flow of oil stops.



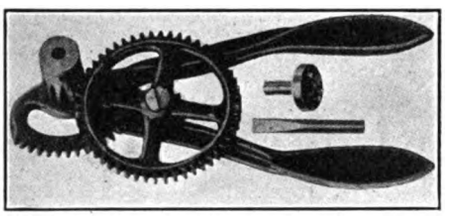
No-Shammy oil can, which puts oil into tanks without tipping and without slopping

Two sizes are made, one containing a quart and the other two quarts. The larger size is 9½ inches high and 7½ inches wide. The material used is copper plated sheet steel. The list prices are $1 and $1.50.

Merry's Rapid Valve Grinder

An appliance for grinding valves with considerably greater speed than is attained by ordinary methods has been placed on the market by Edward Merry, 395 Allen street, Springfield, Mass. The device is so designed that it requires very little overhead space, and so is useful for grinding the valves of motors that are partly under the dash of the car.

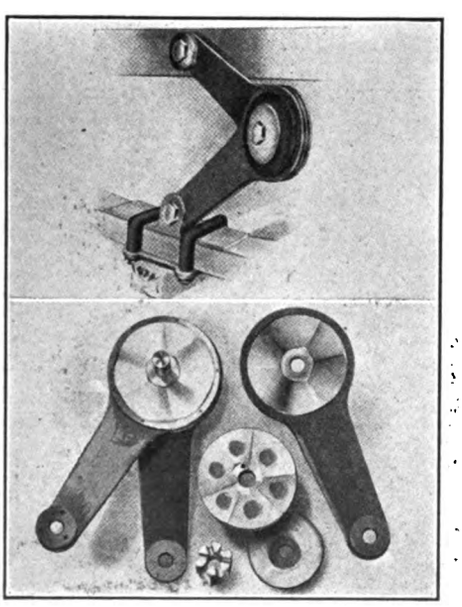
The spindle, which is made to take a flat or forked bit, according to the style of valve, is rotated by a double gearing actuated by back-and-forth strokes of the handles; a stroke in one direction rotates the spindle 3½ times, while a full stroke—back and forth—produces seven revolutions, so that the spindle can be turned 150 or 200 revolutions a minute. The list price of the tool is $2.50.



Merry's valve grinding tool can be used where overhead space is restricted, and works rapidly

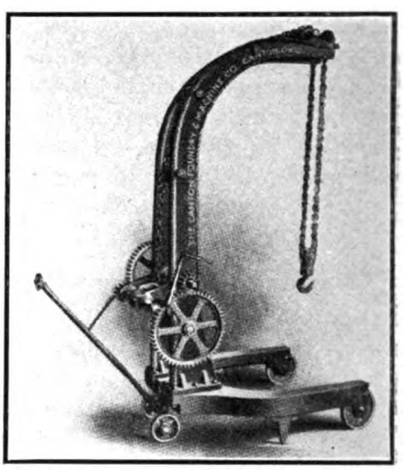
Mondex Shock Preventers

The usual method of applying friction to prevent spring rebound is replaced, in the case of the Mondex shock preventer, manufactured by the A. & J. Mfg. Co., 1790 Broadway, New York, by a system of inclined planes which ride upon each other as the spring is compressed, and compress rubber disks; the greater the amount of spring movement, the greater the pressure on the rubber.



Perforated rubber disks in the Mondex shock absorber take up the force of spring rebound

The inclined planes, which are arranged radially in the hub of the scissors arms, are lubricated to minimize wear. The rubber disks are perforated, so that when they are compressed there will be somewhere for the displaced rubber to go, confined rubber being almost incompressible. The list price is $50 per set. But one size of the shock absorbers is made.



A load of 6,500 pounds can be lifted with the aid of the back gear of the Canton portable crane

Portable Crane for Heavy Work

For lifting heavy objects in the garage or repair shop, and also for moving such objects around while suspended, the Canton Foundry & Machine Co., Canton, O., has brought out a No. 4½ back geared portable floor crane and hoist which has a capacity of 6,500 pounds.

While the back gear is necessary for heavy loads, it is not necessary for comparatively light lifts and can be thrown out and the machine used single geared, saving much time. With the back gear one man can raise the maximum load. The total height of the crane is 8 feet 9 inches, the lift 7 feet 6 inches and the overhang 3 feet 3 inches. The length of the base is 4 feet 3 inches, outside width 3 feet 8 inches and inside width 8 inches less. The weight is 1,400 pounds. The net price is $130.

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In Salesroom and Garage

The Lewis Automobile Co., agent for the Chandler, Stevens-Duryea and Marion cars and the Adams trucks, has leased the building at the southwest corner of Washington and Walton avenue, St. Louis, Mo., and will remove to that location.

R. W. Greene has taken over the repair-shop business of the Cochise Motor Co., at Bisbee, Ariz., and will install a vulcanizing plant. R. E. Powell and R. T. Pelton, the former owners, retain the agency for the Ford and Buick cars.

Harold H. Lahmeyer has leased the Becker building on Front street, Dubuque, Ia., which he will remodel and occupy as a supply house. He has the agency for Case cars.

The Grand Rapids Auto Laundry has opened at 210 Ionia avenue, Grand Rapids, Mich. Roy E. West and Earl S. Tucker are the proprietors.

The Service Garage Co. has taken over the garage at 206-208 Iinia avenue, N. W., Grand Rapids, Mich. R. E. Sproat is the manager.

The Laux Garage has been opened at Wisconsin and 7th street, Racine, Wis. It will be headquarters for the Ford and L. P. C. cars.

G. Shaw and P. J. Lynch have opened a repair-shop on St. Paul avenue near State street, Beloit, Wis.

The Blain Auto Co., Aberdeen, S. D., has been taken over by the Van Brunt Overland Co.

Joseph Kaufman is erecting a two-story garage, 32 x 60 feet, at Oconto, Wis.

MOTOR CAR AGENCIES RECENTLY ESTABLISHED

CALIFORNIA.

Place	Car	Dealer
Los Angeles, Cal.	Haynes	Bekin-Speers Motor Co.
Los Banos, Cal.	Haynes	N. Y. Hulen
Sacramento, Cal.	Chalmers	Bert S. Bingham
San Diego, Cal.	Stutz	Pacific Auto Co.
San Diego, Cal.	Simplex	Pacific Auto Co.
San Diego, Cal.	Mercer	Pacific Auto Co.
San Francisco, Cal.	Apperson	Myers Motor Car Co.

COLORADO.

Denver, Col.	Apperson	Thorney Auto Co.

CONNECTICUT.

Hartford, Conn.	Empire	Keeney Garage
Hartford, Conn.	Oakland	Auto Tire Co.

FLORIDA.

Sanford, Fla.	Apperson	C. F. Williams
Tampa, Fla.	Regal	E. E. Cone

GEORGIA.

Atlanta, Ga.	Apperson	Southern Apperson Co.
Waynesboro, Ga.	Apperson	J. O. Applewhite

IOWA.

Boxolm, Ia.	Apperson	Ecklund & Burkgren
Brooklyn, Ia.	Apperson	B. W. Sloan
Cresco, Ia.	Haynes	Woods & Milz
Deep River, Ia.	Glide	C. M. Shaffer
Des Moines, Ia.	Apperson	Apperson Iowa Co.
Dubuque, Ia.	Dodge	Byrne Bros.
Eagle Grove, Ia.	Haynes	Middletown Auto Co.
Eagle Grove, Ia.	Herff-Brooks	Wm. Pletcher
Mason City, Ia.	Apperson	Leaman Auto Co.

ILLINOIS.

Argenta, Ill.	Apperson	J. A. Eyman
Bethany, Ill.	Haynes	Hudson & Scott
Chatsworth, Ill.	Herff-Brooks	T. C. Baldwin
Chenoa, Ill.	Glide	F. E. Cunningham
Chestnut, Ill.	Apperson	O. F. Downey
Chicago, Ill.	Oakland	Schillo Motor Sales Co.
Danville, Ill.	Apperson	Barger Sales Co.
Elliott, Ill.	Herff-Brooks	Nels Sumnes
Gardner, Ill.	Apperson	Knut Mathison
Gibson City, Ill.	Apperson	Wm. A. Susdorf
Hammond, Ill.	Haynes	E. B. Leavitt
Jerseyville, Ill.	Apperson	W. F. Shephard
Joliet, Ill.	Haynes	Joliet Motor Co.
Kilbourne, Ill.	Haynes	A. E. Sauer
Lee, Ill.	Apperson	S. Ostewig & Co.
Oregon, Ill.	Apperson	R. O. Sawner
Pleasant Plains, Ill.	Apperson	John Lehman
Princeton, Ill.	Apperson	Evans-Coppins Co.
Quincy, Ill.	Apperson	Quincy Garage
Stonington, Ill.	Apperson	F. A. Gleason

INDIANA.

Indianapolis, Ind.	Woods Electric	Harry K. Stormont
Redkey, Ind.	Saxon	Redkey Garage

KANSAS.

Liberal, Kan.	Haynes	Liberal Auto Supply Co.
Salina, Kan.	Mitchell	Ollinger Auto Co.
Salina, Kan.	Overland	Ollinger Auto Co.
Wichita, Kan.	Regal	Regal Motor Co.

KENTUCKY.

Greenville, Ky.	Apperson	R. O. Pace
Louisville, Ky.	Haynes	Van Patton Motor Car Co.
Louisville, Ky.	King	Van Patton Motor Car Co.

LOUISIANA.

Place	Car	Dealer
New Orleans La.	Jeffery	Abbott Auto Co., Inc.

MARYLAND.

Aberdeen, Md.	Reo	Motor Sales Co.
Baltimore, Md.	Apperson	Model Automobile Co.
Salisbury, Md.	Haynes	Peninsular Motor Co.

MASSACHUSETTS.

Watertown, Mass.	Herff-Brooks	C. E. Mathews

MICHIGAN.

Detroit, Mich.	Haynes	McKinney-Devlin Co.
Flint, Mich.	Chevrolet	Garner Auto Sales Co.
Grand Rapids, Mich.	Haynes	Adams & Hart
Jackson, Mich.	Ford	Ralph Lewis
Jackson, Mich.	Cadillac	Ralph Lewis
Ludington, Mich.	Oldsmobile	Donald McVichie
Plainwell, Mich.	Herff-Brooks	G. H. Crawford
Port Huron, Mich.	Overland	Mooney Motor Sales Co.
Saginaw, Mich.	Krit	J. P. Beck
South Haven, Mich.	Maxwell	C. A. Herriman
Traverse City, Mich.	Regal	S. O. Sawyer
Woodbury, Mich.	Apperson	W. B. Wells

MINNESOTA.

Minneapolis, Minn.	Apperson	Nicollet Ave. Auto Co.
Minneapolis, Minn.	Westcott	D. G. Hedderly & Son
Sottenwood, Minn.	Haynes	A. O. Hovdesven & Son

MISSOURI.

Kansas City, Mo.	Apperson	Bruening Bros. Auto Co.
Kansas City, Mo.	Paige-Detroit	Greenleace Motor Car Co.
Springfield, Mo.	Regal	Sam Herrick & Son
St. Louis, Mo.	Davis	The Cherokee Auto Co.

NEBRASKA.

Omaha, Neb.	Paige-Detroit	W. L. Huffman Auto Co.
Omaha, Neb.	Apperson	Apperson Jack Rabbit Co.

NEW YORK.

Brooklyn, N. Y.	Apperson	Farrell Auto Co.
Buffalo, N. Y.	Haynes	A. L. Dixon
Buffalo, N. Y.	Dodge	J. A. Cramer
Buffalo, N. Y.	Herff-Brooks	Henry Braunn

NORTH DAKOTA.

Hillsboro, N. Dak.	Haynes	Helgo Bros.

OHIO.

Circleville, O.	Reo	Clifton Bros.
Cleveland, O.	Apperson	Eiseman Auto Co.
Cleveland, O.	Haynes	W. H. Barger Co.
Columbus, O.	Vulcan	Miller-Main Garage
Columbus, O.	Hupmobile	The Kaiser Motor Car Co.
Columbus, O.	Abbott-Detroit	W. W. Muzzy
Columbus, O.	Haynes	P. H. Rogers Motor Car Co.
Columbus, O.	Waverly	Brasher Motor Car Co.
Columbus, O.	White	Brasher Motor Car Co.
Columbus, O.	Cole	Brasher Motor Car Co.
Greenville, O.	Buick	Dunham Auto Co.
Lancaster, O.	Reo	Clyde Childester, Lancaster
New Berlin, O.	Apperson	W. E. Schumacher
Toledo, O.	Oldsmobile	Bunnell Auto Sales Co.
Toledo, O.	Cadillac	Toledo-Cadillac Co.
Toledo, O.	Chandler	Lichtle Auto Co.
Toledo, O.	Apperson	R. M. Motor Car Co.
Wooster, O.	Apperson	H. H. Ziegler
Youngstown, O.	Haynes	Electric Auto Service Co.

OKLAHOMA.

Tulsa, Okla.	Herff-Brooks	J. H. Snider

OREGON.

Place	Car	Dealer
Portland, Ore.	Apperson	Apperson Motor Car Co.

PENNSYLVANIA.

Biglerville, Pa.	Herff-Brooks	E. H. Trostle
California, Pa.	Haynes	Duff Garage
Erie, Pa.	Haynes	Wolverine Motor Co.
Fayette City, Pa.	Haynes	J. P. Sloterbeck & Son
Franklin, Pa.	Haynes	Geo. K. Moffett
Greensburg, Pa.	Haynes	F. M. Seanor Motor Co.
Greenville, Pa.	Haynes	Gillespie & Holden
Houston, Pa.	Apperson	Isaac C. Patsch
Philadelphia, Pa.	Hupmobile	Tioga Auto Co.
Pittsburgh, Pa.	Apperson	Pittsburgh Apperson Co.
Punxsutawney, Pa.	Haynes	Edelblute & Olson
Reading, Pa.	Haynes	L. H. Fisher
Scranton, Pa.	Apperson	C. C. Conrad
Tunkhannock, Pa.	Apperson	C. P. McKown
Tyrone, Pa.	Apperson	Penna Auto Co.

RHODE ISLAND.

Providence, R. I.	Apperson	Apperson Sales Co.
Providence, R. I.	Dodge	Cadillac Auto Co. of R. I.
Providence, R. I.	Pathfinder	Ribert L. Knight

SOUTH CAROLINA.

Charleston, S. C.	Haynes	Palmetto Garage Co.

SOUTH DAKOTA.

Sioux Falls, S. D.	Dodge	C. W. Thomson

TENNESSEE.

Nashville, Tenn.	Hudson	Imperial Motor Car Co.

TEXAS.

Amarillo, Tex.	Dodge	W. E. Groendycke
Austin, Tex.	Partin-Palmer	Deen's Garage
Brownsville, Tex.	Haynes	Hinkley Auto Co.
Dallas, Tex.	Paige-Detroit	Munger Automobile Co.

UTAH.

Ogden, Utah	Apperson	Becraft Auto Co
Salt Lake City, Utah.	Apperson	Apperson Motor Car Co.

VIRGINIA.

Norfolk, Va.	Apperson	Seay Bros.
North Tazewell, Va.	Herff-Brooks	W. A. Scott & Co.

WEST VIRGINIA.

Wheeling, W. Va.	Dodge	Engineering & Equip. Co.

WASHINGTON.

Walla Walla, Wash.	Dodge	Franklin Motor Car Co.

WISCONSIN.

Milwaukee, Wis.	Haynes	W. H. Diener
Prairie du Chien, Wis.	Saxon	Harris Auto Co.
Seymour, Wis.	Saxon	Otto Motor Co.

CANADA

Pt. Arthur, Ont., Can.	Saxon	Central Garage
Sault Ste. Marie, Ont.	Regal	G. P. Black
Toronto, Ont.	Regal	Regal Motor Sales Co.

COMMERCIAL

Hartford, Conn.	Vim	Keeney Garage Co.
Hartford, Conn.	Selden	Keeney Garage Co.
Belvidere, N. J.	Koehler	Harry Searles
Philadelphia, Pa.	Flint	D. Walter Harper
Austin, Tex.	Koehler	S. E. Kinney
Dallas, Tex.	Koehler	W. T. Keaton
San Antonio, Tex.	Koehler	C. H. Dean

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SUMMARY OF THE GASOLENE SITUATION IN SIXTEEN PRINCIPAL CITIES

City	Wholesale Price Today	Retail Price Today	Changes in Wholesale Price	Principal Companies Selling
Boston, Mass.	14	17-18	Jan. 1, 1914, was 18 cents.	.....
New York, N. Y.	13	20 and 14	Jan. 1, 1914, was 16; June 2, 15; June 3, 14; July 21, 13.	Standard, Texas, Gulf and Pure Oil.
Philadelphia, Pa.	10.5-11	12-16. Avg. 14	Texas—Jan. 1, was 14; March 1, 13; in July, 12; Aug. 4, 11. Atlantic—Jan. 1, 13; March 1, 12.5; July 27, 11.	Atlantic Refining, Texas, Gulf and O. F. Zurn Co.
Baltimore, Md.	11.5-13.5	Avg. 16	Jan. 1, was 13.5.	Standard, Crown Oil & Wax, Red C Oil, Maryland Oil and American Oil.
Atlanta, Ga.	8, 10, 11 and 12	10, 13.5, 16 and 20	Fluctuations due to price war.	Texas, Standard, Gulf and Pittsburgh Plate Glass Co.
Detroit, Mich.	11	11, 14 and 16	Jan. 1, was 14, 14.5 and 16.	Standard, Sun and Greenslade.
Chicago, Ill.	11	14 and 15	.....	.....
Indianapolis, Ind.	11-11.5	13-16	Jan. 1, was 13 and 14.5.	.....
Milwaukee, Wis.	12, 14.5, 17 and 19	Avg. profit 2 cts.	Year ago, 15.5, 18, 19.5 and 21; May 1, 13.5, 15, 17.5 and 20.	Standard and independents.
Minneapolis, Minn.	11.5-12	12-20	Nov. 26, 1913, 16; Dec. 22, 15.5; Feb. 11, 15; April 1, 14.5; April 18, 14; May 11, 13.5; June 15, 13; July 11, 12.5; Aug. 10, 12.	Standard, Pure Oil, Van Tilburg Oil and independents.
Kansas City, Mo.	10.3	15	Nov., 1913, 15.5 to 15; Dec., 14.5; Jan., 14; Feb. 13.5. Three short drops of half cent. June 15, 12 to 10.8; July 27, 10.3.	Standard and independents.
Austin, Tex.	8-11	Profit of 1 and 2 cts.	Jan. 20, 14; Jan. 22, 12; Feb. 2, 14; April 22, 12; April 14, 10; Sept. 1, 8.	.....
Denver, Col.	13	14-20. Avg. 15	Jan. 19, 1 cent drop to 18; April 22, 17; June 1, 16; few days latter, 14; June 29, 13.	Cudahy Refining, Mountain Motor Fuel and Great Western Oil.
Salt Lake City, Utah	18	20	.....	Standard and Culmer Oil.
San Francisco, Cal.	13.25-13.5	15-15.5	Jan. 1, was 14.5; May 20, 13.5; July 1, one company cut to 13.25.	Associated Oil, Standard, Union Oil and American Gasolene.
Los Angeles, Cal.	12	13.5	Jan. 1, was 14.	.....

GASOLENE RETAILERS PAY VARYING PRICES

Seldom the Same in Different Cities of the Country

(Continued from page 6)

The price itself has fallen three and four cents since January 1. In some cities trade competition has forced it lower. Following are the conditions in sixteen of the principal cities from coast to coast and from Texas to the Northern border. A detail summary appears in an accompanying table. The prices which follow the names of the following cities are the prices paid by the garages.

Boston—Price, 14 cents. Gasolene has dropped steadily a cent at a time since January, when it was 18 cents. The majority of garages retail it at 17 cents, although some get 18, and the Fenway Garage Co., one of Boston's largest, asks 20 cents a gallon, but will reduce within a few days to 18 cents. Outside of Boston gasolene has sold for 11 cents this season, but the Hub garagemen say it is in many cases an inferior mxture. The Standard Oil Co. sells most of the gasolene bought by garages but has no monopoly.

New York—Price, 13 cents. All the principal companies selling gasolene on Manhattan island charge the garageman 13 cents. The gasolene question is one of the prime topics of the day and has been for months. The garages concertedly opposed the rise in price last year, and leaders in the New York Garage Association charge that while the Standard Oil Co. claims it sells but one grade of fuel it dispenses two, one its "auto naptha" and the other a "painters' naptha."

Whatever rivalry there may have been between the larger companies seems to have passed away. The price reached 18 cents last year but has declined since then.

The better garages charge 20 cents for gasolene and endeavor to require patrons to buy at the garage. Wayside stations, however, are making inroads, having little investment or equipment and selling for 14 cents. None of the companies guarantees a test figure, but Texas states that its gasolene averages 62 to 64.

Philadelphia—Price, 10½ and 11 cents. There is competition in Philadelphia and the price has been forced down. The Texas Co., the Gulf Refining Co. and the Atlantic Refining Co. charge 11 cents, and the O. F. Zurn Co., which both wholesales and retails, sells to the garage for 10½ cents.

The retail price varies. Of thirteen garagemen who were asked their price to the customer, the prices asked were: One, 12; two, 12½; three, 13; two, 14; three, 15; two, 16. Location has much to do with the price asked by the garage; the further north the garage is located the higher the price.

Baltimore—Price, 11½ to 13½ cents. Eleven and one-half cents is the accredited price to the garageman, although some insist that they have to pay 13½. Just why is not stated. The oil companies seem to be lined up, Standard Oil on one side and the others on the other. The retail price averages 16 cents; it was 20 cents in January. One small dealer is retailing for 13½.

Atlanta—Price, 8, 10, 11 and 12 cents. Conditions in Atlanta are peculiar; the price here is equaled only by that in Austin, Tex. In Atlanta the Texas, Standard Oil, Gulf Refining and Pittsburgh Plate Glass companies are engaged in a warm combat. Some time ago the Pittsburgh company, through a good business stroke in importing gasolene in tank car lots, was able to undercut the rest of the trade. Gulf Refining then cut two cents and Pittsburgh met the price. Gulf cut again and now 60 gasolene is being sold to garages for 8 cents.

This condition has obtained for the past six weeks. Standard and Texas refused to cut at all and it is expected that the Pittsburgh company will return to 12 cents. The Gulf company is said to be supplying three-fourths of the trade in Atlanta as a loss on every gallon. Four grades of gasolene are sold; 60 test, known as "naptha," retails for 10 cents; 64 test for 13½ cents, 64 "new process" for 16 cents, and 70 test for 20 cents.

Detroit—Price, 11 cents. In the "Motor Capital" the oil companies state that the price to garages is 11 cents, but this also is the price at which many garages sell gasolene at retail. That there are two grades of fuel in the field is indicated by the statements of the garagemen that they will sell a "higher test" fuel for from 14 to 16 cents. The oil companies generally do not admit that two grades of gasolene are supplied to garages.

Chicago—Price, 11 cents. Garages charge varying prices to customers but the common rates are 14 and 15 cents.

Indianapolis—Price, 11 and 11½ cents. Gasolene has dropped 2 and 3½ cents since January. The wholesale price is quite uniform, but the retail figure varies according to the garage and section of the city. Competition between the oil companies has been keen in the Middle West, but it is stated that there is no war in Indianapolis.

Milwaukee—Price, 12, 14½, 17 and 19. The range of prices is due to the fact

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that four grades of gasolene are handled in this city. For 60-62 test the garageman pays 12 cents; for 65-68, 14½; for 70, 17, and for 72, 19. As a rule the garages handle only the 65 and 70 test fuels because they do not feel they can afford to maintain storage tanks for all four grades. The two grades handled are advertised as "high test" and "low test."

The garages are slowly retiring from the gasolene trade because of the actions of the oil companies; Standard Oil and some of the independents have established filling stations in various parts of the city and this cuts into the garage gasolene trade enormously. As a rule a profit of two cents is made by the garage.

Minneapolis—Price, 11½ and 12. The lesser price is maintained by some of the smaller independent companies. Gasolene of a 60-62 test sells generally for 12 cents.

This city is one in which the garages are most threatened by the filling station. The Pure Oil Co. is erecting 11 stations at advantageous points; the buildings are of brick and are surrounded by a pretty lawn and landscape effect with the company's name in white stones in a grassy bank. The Van Tilburg Oil Co. has four stations and Standard two, while scores of wayside tanks are scattered over the city. Even drugstores retail gasolene, a practice which is coming into vogue in numerous other cities. At Pure Oil stations the car owner can buy gasolene at the price which the garageman himself has to pay. Garages retail at from 12 to 20 cents.

Kansas City—Price, 10.3. This city is the hotbed of a gasolene turmoil. It is the Standard Oil on one side and, as is not unusual, the independents on the other. Gasolene has dropped steadily from 15½ in November, 1913, to 10.3 today, and in quantities garages can even get fuel at 10 and 9.8 cents.

These prices are wholesale for 60-test fuel. Garagemen maintain a profit of five cents a gallon, selling at 20 cents a gallon at the beginning of the year and now at 15 cents.

However, the independent companies and the Standard Oil Co. began operations of numerous filling stations throughout the city, selling the fuel at retail at the wholesale prices.

At the present time the garages are reducing their fuel prices to meet the filling station figures. For instance, both the Karshner Motor Co. and the Broadway Garage are today selling for 15 cents. But the Broadway Garage will reduce its price to 10.3 cents. The oil companies are selling to garagemen now on contracts at from 0.3 to 0.5 cents less than the wholesale prices above mentioned. On 200-gallon orders, garagemen can today purchase for 10 cents flat, and on larger orders at 9.8 cents.

In every instance the decrease was first announced by the Standard company and then was followed immediately by the independents. Concerning the status of the competition there apparently is a continuation of the oil war that has been going on for many years. The close proximity of the Oklahoma fields, the fact that several of the independent companies maintain their headquarters here, and the Missouri anti-trust legislation against the Standard have kept the oil industry in Kansas City in a turmoil of continuous price-cutting and fighting.

There has been an overproduction of oil during the last year in the Oklahoma and Kansas fields. The prices of crude oil, due to a slump in production, jumped until it was about $1.08 per barrel at the well last winter and the early spring. Such an unprecedented price made production profitable, many new wells were drilled, and smaller wells that previously had been too small for profitable pumping jumped the production almost as fast as the prices had gone up. Oklahoma was unable to ship or dispose of its crude oil. Refineries were glutted and crude oil prices began dropping rapidly.

All summer the overproduction of last spring and the early summer has been flooding the market; overproduction and the present cheapness of crude oil here is probably the biggest factor in nation-wide gasolene decreases.

In addition, in Missouri the Standard was ordered ousted by the Supreme Court late last fall. On technicalities the company obtained a rehearing of the suit—a part of the new evidence of which was the public sentiment of Missouri concerning the oil company. Early in the summer the ouster was so modified that the company will not be forced out of Missouri.

As a sort of a by-play the independent dealers announced early in August that during that month they would give one-half a cent from the sale of each gallon at their filling stations here to a good roads fund of the Automobile Club of Kansas City. The Standard shot back by donating half a cent a gallon of similar sales in August to five of the city's biggest charities. That has amounted to about $2,000. Standard holds about 60 per cent of the trade.

Austin, Tex.—Price, 8-11 cents. Keen competition exists in this city. Several refining and distributing companies are contending for business. Prices vary greatly and go up and down periodically. The strife has cut the margin of profit to such an extent that some of the garages have temporarily discontinued the gasolene end of their business.

Denver—Price, 13 cents. There is no war here; in fact, the prices of all the principal companies have moved at about the same time. The general retail price is 15 cents, although some garages offer it at a lower figure as a "leader." One garageman who handles it largely to accommodate his patrons asks 20 cents. There are many filling stations.

The installation of pumps at the curbs is prohibited by the city, but the garagemen have prepared a petition for permission to run delivery pipes from the building line to the curb. The petition has not yet been acted upon.

Salt Lake City—Price, 18 cents. The inland location of this city has much to do with the relatively high price which the garageman has to pay for gasolene. The profit also is small. A belief seems to exist that there is "money in selling gasolene" and numerous small dealers and filling station men are opening up. This keeps the profit down to about two cents a gallon.

Two years ago garages sold all of the gasolene and made a 5-cent profit, but curb-pump stations, drug stores and grocery stores have broken into the trade until it is not highly profitable.

Garagemen and dealers have endeavored many times to make some legal agreement which would hold up the price of gasolene, but each time the agreements have fallen through within a few days. As it stands today the curb stations do about 95 per cent of the business at 20 cents, paying 18 cents wholesale.

San Francisco—Price, 13¼-13½. Prices are fairly steady but the margin of profit is small. Standard Oil, Union Oil and the American Gasoline Co., the latter an ally of the Shell Spirits of England, all sell at 13½; the Associated Oil Co. sells at 13¼. The profit to the garagemen is about two cents. The Omen Oil Co. operates a chain of filling stations at 14½ cents—a one-cent profit—and it cuts into the garage gasolene trade considerably. Common report has it that this is the American Gasoline Co.'s retailing company.

Los Angeles—Price, 12 cents. Curb stations do a big business here and cut into garage gasolene sales. The comparatively low price is due to competition between the oil companies.

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Advanced Maintenance

REPAIRING DAMAGED FENDER IRONS

By George Fernwell

Fig. 1 illustrates a method of reshaping the diagonal member distorted at its upper extremity A, so that the cross shaped member is twisted out of line, as shown at B.

It is preferable to heat the fender iron at the point of distortion A, Fig. 1, before applying the wrench as shown.

As a guide to the eye in determining

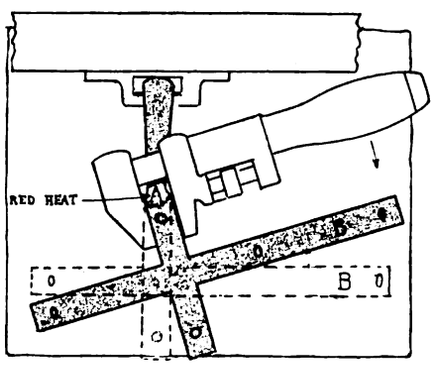


Fig. 1—A large wrench may be used to reshape a diagonal member that has been distorted at its upper extremity. Heat should be applied at the point of distortion before applying the wrench

when the cross member is in line, the tire of the adjacent wheel may be used.

Before proceeding to heat and reshape a fender iron apparently deformed at or near the heel, the latter should be examined with a view to ascertaining if the heel is bent so as to impair the area or length of contact with its abutment, upon which depends the firmness of clamping to be obtained with the set screw, Fig. 2.

Figs. 2 and 3 show the straight line contact or base for rigidly clamping, as it should be.

Fig. 4 illustrates the heel bent either by the original accident or by bad judgment in repairing, so as greatly to lessen the length and area of contact of the face A of the heel with perpendicular face of the chassis.

It would not be possible to clamp the fender iron as in Fig. 3, so that it would be rigid enough to prevent excessive shaking and consequent rattling of the fender with the car in use.

Therefore, to commence the repair properly, the heel, if bent as in Fig. 4, should be straightened as in Fig. 3, before attempting any other necessary reshaping work.

Then if the angle of the fender iron at A, Fig. 3, required increasing or decreasing in degree to conform with the normal angle, precaution should be taken to heat the angle at B and to grip the heel C in a vise so as to insure the heel shall not be bent as in Fig. 4.

To localize the red heat at B, Fig. 3, to as short a length as possible, an acetylene torch is most efficient. But lacking this equipment the red heat at B should be kept from affecting the heel by quenching the latter in water up to the actual bend, A.

Fig. 5 shows a type of heel of fender iron consisting of a tapered pin or plug.

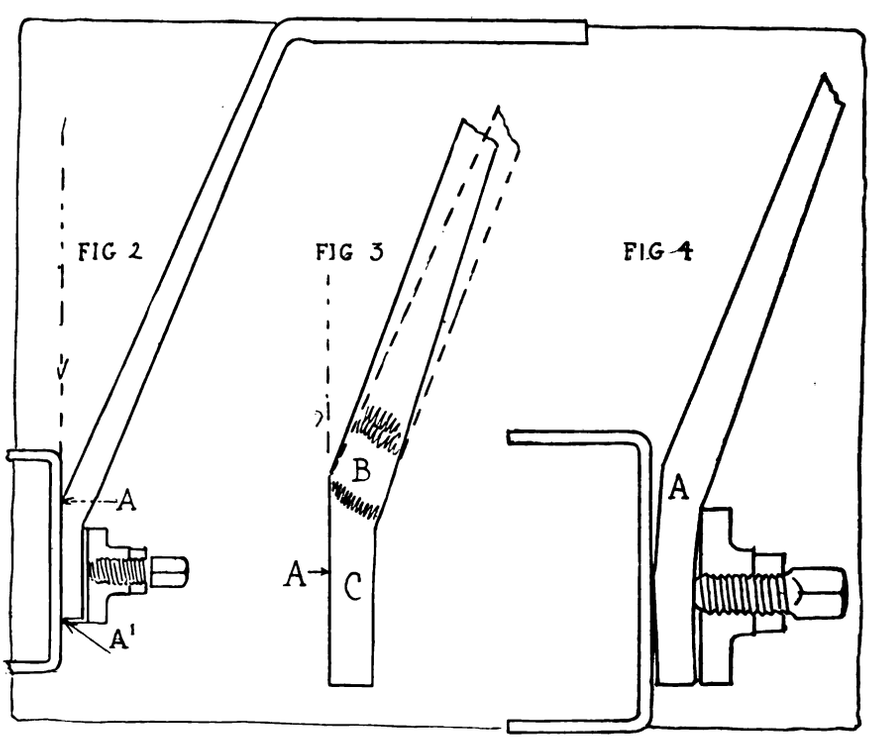
Merely gripping the taper in a vise will affect its full insertion in its socket, and, further, even a slight bend, Fig. 6, caused in the taper, will prevent more than partial insertion in the socket.

Fig. 7 shows a method of straightening fender irons having tapered heels without injury to the latter, providing heat is used as at A, by using the socket in place of a vise.

The fender iron is shown to have been heated at A, cooled at the taper, and quickly inserted in its socket without using the nut C. Also it is shown that to get as rigid resistance as possible to the bending iron, the fender iron is inserted in its socket so as to apply the leverage of the bending iron as nearly as possible lengthwise of the chassis.

The preceding directions for finding a base of measurement and comparison for reshaping a deformed iron is based on the assumed conditions that the corresponding fender on the opposite side of the chassis was fully attached in its place and that it was in a practically perfect condition of alignment.

We should now consider the problem presented by a repair job in which both right and left fenders and fender irons are deformed and out of alignment and therefore require attention.



Figs. 2, 3 and 4—The heel of a bent fender iron should be examined to see if it has full contact, as from A to A1, Fig. 2, which, with Fig. 3, shows the heel as it should be. But if the heel is bent as at A, Fig. 4, it would not be possible to clamp the iron tight enough to prevent rattling and loosening

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In this case there would be no uninjured fender iron to serve as a partial guide when reshaping the deformed one.

It is such a remote possibility as to be hardly worth consideration that a blueprint of the chassis under repair, giving the required dimensions, would be available.

The following method of finding the position of alignment of the fender irons under the above described conditions while practical, still may not be applicable in all cases. In the latter event, however, it will serve to convey to the workman suggestions of how other conditions may be met.

Assuming that both runningboards are properly leveled and in their normal parallel alignment with the chassis frame, and that both damaged fenders have been put in as good repair as possible, a selection should be made from the right and left fenders of the one which is in the better condition, or the one which had been the least deformed before repairing.

From the selected fender the deformed fender iron should be removed.

If the fender is of a type which is made to be attached to the runningboard by means of bent wrought iron straps, Fig. 8, these also should be removed, unless they are not deformed.

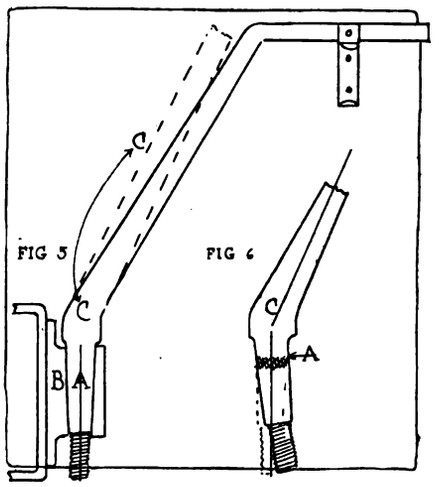
The selected fender may then be attached to the chassis frame by the remaining originally provided means, such as cap screws or bolts clamping the lower edge of the apron to the frame channel, Fig. 8.

If heel straps are used, B, Fig. 8, these should be straightened out where they come into contact with the under side of the runningboard, and then they may be bolted to the runningboard only, not to the fender. If the heel of the fender is of the type, Fig. 8, both step bolts may be inserted but not screwed tight.

The condition at this stage may be described as that of a fender without a fender iron, but otherwise attached to the chassis at the remaining points of fastening originally provided to hold it in its normal position.

As a result of there being no fender iron to support the upper portion of the fender, obviously the latter will sag.

It will be found, however, that the unsupported upper part of the fender may be raised with the hands until the upper surface is level transversely to the chassis and that the extreme forward part of the fender can be swung outward or inward as may be necessary to bring it in line with the outer edge of the runningboard. If an assistant be available, the fender may be held by him in the indicated position of alignment while the necessary measurements are being taken. Otherwise a simple wooden support can be cut to extend from the floor to the top of the fender of a suitable length to bring the extreme upper portion of the top of the fender horizontal.



Figs. 5 and 6—The type of iron having a taper end to fit a taper socket will be marred if gripped in a vise so it cannot be fully inserted in its socket; a slight bend, Fig. 5, will prevent its insertion, if the upper part of the iron is normally positioned

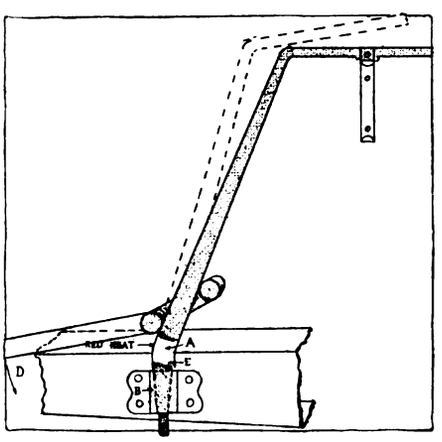


Fig. 7—By using the socket as a vise to hold the end of the distorted iron and using a bending iron as shown the taper heel will not be damaged. The iron should be heated and pressure applied in the direction of the length of the frame

A fender, especially one which has been repaired, may have more or less of a tendency to remain out of shape, so that when braced by a wooden support, applied near its outer edge, of a suitable length to bring it level at the extreme top crosswise of the fender, it may still be considerably out of line with the outer edge of the runningboard.

It should be borne in mind just here that the particular object at this stage is to ascertain as precisely as possible the height at which the fender was originally fitted above the level of the chassis.

Unquestionably the fender would have been originally made and fitted so as to be perfectly parallel at its outer edge with the chassis frame, or in line with the runningboard.

There is practically only one position or height above the level of the chassis at which the top of the fender crosswise can be perfectly horizontal and at the same time permit the outer edge of the fender to be parallel with the chassis or in line with the runningboard and the apron attached to the frame.

Therefore any tendency of the fender to remain out of shape must be overcome by forcibly holding it in position or by such horizontal or diagonal wooden braces or supports as the workman may find necessary to permit the necessary measurements to be taken.

Owing to the shape and springy nature of the material used, it may appear that a fender has no definite dimensions or form when considered in cross-section; nevertheless there is practically only one cross-sectional shape it can

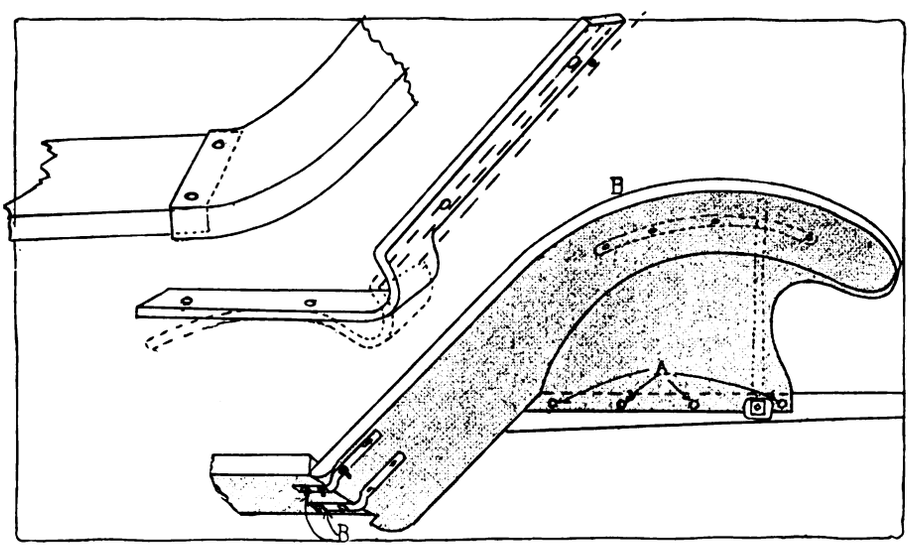


Fig. 8—A fender may be attached to its chassis and running board without fender irons to ascertain its height when it is level at the top and its running board is in its normal position

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assume when fastened at all the original points of attachment when caused by force, if necessary, to coincide in alignment with the frame and with the runningboard.

Good judgment and an eye for alignment should at this stage serve the workman more effectively and with quicker subsequent progress than by making use of the extensive measuring described a little further on. For instance, the degree of misalignment which could not be detected by the unaided eye should not be considerable.

Having supported and braced the fender in such a manner as to satisfy the eye of its alignment in the position shown in Fig. 8, the same dimensions may be taken and indicated in a rough sketch of the cross section of the chassis and elevation of the fender iron.

To repeat these dimensions: The distance transversely of the chassis from the middle perpendicular line of the radiator to a point in line with the center of the fender bolt nearest the radiator. The height from the center of the adjacent hub cap to a point in the fender nearest the outermost fender bolt hole at or near the extreme top of the fender. The distance measured horizontally from the face of the radiator to the center of the transverse row of fender-bolt holes.

These dimensions, it may be noted, once being ascertained, provide the same base of measurement and comparison as were described in the preceding article as being furnished by one fender and fender iron corresponding to that repaired, being in perfect condition of repair and alignment. Therefore, having roughly sketched and filled in the dimensions obtained as repeated above, the fender may be detached from the chassis and the fender irons reshaped according to the same general methods previously described.

The Week's Incorporations

Worcester, Mass.—Stoddard Rubber Co.; capital $60,000. Corporators—Charles A. Stoddard, F. Madge Stoddard and Samuel L. Cowitz.

Los Angeles, Cal.—L. A. Automobile Works; capital $10,000. Corporators—Thos. E. Mitchell, John Stintin and others.

Portland, Ore.—Electric Service Vehicle Co.; capital $25,000. Corporators—A. E. Blair, F. S. Robinson and R. A. Leiter.

Kansas City, Mo.—Kansas City Auburn Auto Co.; capital $8,000. Corporators—R. W. Gall, B. P. Gall and E. H. Farmsley.

Detroit, Mich.—Addison Garage Co.; capital $8,000. Corporators—W. F. Malow, George C. King, Edward E. Esper and W. T. Phillips.

Mitchell, So. Dak.—Motor Mart; capital $2,500; to deal in motor cars. Corporators—M. P. Fugel, C. A. Allison and Mary E. Allison.

Boston, Mass.—E. A. Gilmore Co.; capital $20,000; motor cars. Corporators—Ernest A. Gilmore, Augustus C. Gilmore and Arthur P. Teele.

Covington, Ky.—Madison Motor Car Co.; capital $5,000; to deal in motor cars. Corporators—E. J. Moore, Jr., Charles E. Madris and Maria Moore.

La Crosse, Wis.—Moll-Savage Co.; capital $10,000; to deal in motor vehicles, etc. Corporators—A. L. Moll, M. D. Savage and George H. Gordon.

Indianapolis, Ind.—Indiana Taxi Co.; capital $2,000; to conduct a motor transit and taxi business. Corporators—R. Kenney, H. N. Siefert and O. Siefert.

Akron, O.—Smith Motor Co.; capital $5,000; to deal in motor cars. Corporators—E. D. Smith, E. E. Smith, F. W. Hachtel, W. S. Nicodemus and Mary Distel.

Cleveland, O.—Cleveland Motor Car Sales Co.; capital $25,000. Corporators—M. D. Bramley, Harry C. Walker, Arthur Hutt, M. Barthelman and J. C. Simon.

Sioux Falls, So. Dak.—Cadillac Sales Co.; capital $25,000; to deal in motor cars. Corporators—D. P. Fargo, C. M. Fargo and M. F. Beveridge, all of Sioux Falls.

Wilmington, Del.—Hester Tire & Rubber Co.; capital $300,000; to manufacture tires, tubes, etc. Corporators—B. H. Friel, L. A. Brownhill and G. M. Purcell.

Muskogee, Okla.—Muskogee Buick Sales Co.; capital $3,000; to deal in motor cars. Corporators—Hugh Swift, Fay H. Swift and W. T. Wisdom, all of Muskogee.

Riverside, Cal.—Fairmont Garage & Machine Works; capital $50,000. Corporators—A. A. Gamble, W. W. Gamble, R. E. Gamble, L. W. Gamble and Dora V. Gamble.

Edwardsville, Ill.—American Standard Automobile Co.; capital $100,000; to manufacture and deal in motor cars. Corporators—P. Berhardt, C. H. Gerling and L. Kirsch.

Seattle, Wash.—Western Auto Subcasing Co.; capital $100,000. Corporators—Hiram S. Nettleton and Marius S. Williams; Wright, Kelleher & Caldwell, 402 Burke building.

New York, N. Y.—Advertising Auto-Car Co.; capital $100,000. Corporators—Rocco J. Cipriano and Antonio Di Giorgi, both of 107 Broad street; Julius J. Lusardi, Raritan, N. J.

San Antonio, Tex.—Alamo Packard Auto Livery Co.; capital $4,500; to operate a motor livery. Corporators—Jennie D. Tucker Arthur M. Tucker and George A. Tucker.

Newark, O.—Blair Motor Truck Co.; capital $100,000; to manufacture motor trucks. Corporators—J. F. McCune, C. A. Smith, R. W. Smith, C. H. Spencer and W. S. Weiant.

San Francisco, Cal.—Ford Starter Mfg. Co.; capital $20,000; to manufacture motor car starters. Corporators—E. P. DeBerry and W. L. Hoyt, both of Berkeley; F. L. Dreber.

Peoria, Ill.—National Electric & Supply Co.; capital $75,000; to manufacture electrical and motor car supplies. Corporators—Ralph V. Miller, Theodor E. Bass and H. H. Moody.

Brooklyn, N. Y.—Russian American Rubber Tire Works; capital $100,000. Corporators—Rose Miller, 477 Stone avenue; Isidore Kelner and Sruel Billik, both of 1549 Pitkin avenue.

Cincinnati, O.—Palmer Automatic Gear-Shaft Co.; capital $10,000; motor car supplies. Corporators—R. P. Palmer, S. R. Palmer, W. H. Palmer, C. P. Lindsay and G. W. Frank.

Chicago, Ill.—Carmen Mfg. Co.; capital $2,500; to manufacture and deal in motor car parts and accessories. Corporators—Edward L. Archibald, Richard V. Megary and Charles R. Brown.

Everett, Wash.—Paddock-Fowler Auto Co.; capital $10,000; to deal in motor cars. Corporators—W. R. Paddock, G. W. Fowler, Harry B. Gay and A. C. Edwards, 211 Realty building.

Rockford, Ill.—C. B. Williamson Corporation; capital $2,500; to manufacture and deal in motor vehicles, accessories, supplies, etc. Corporators—C. B. Williamson, F. C. Gleasman and O. V. Williamson.

Changes in Capitalization.

Buffalo, N. Y.—Lumen Bearing Co.; from $200,000 to $300,000.

Changes in Corporate Title

Cleveland, O.—Overland-Garford Sales Co. to Overland-Cleveland Co.

Minneapolis, Minn.—Tire Supply Association to Western Automobile Supply Co.

Recent Losses by Fire.

Haverhill, Mass.—Hotel Dennis Garage; loss not stated.

Harbor Springs, Mich.—Frank Voorhees Garage; building damaged; loss $2,000.

St. Paul, Minn.—Green Auto Livery Garage; building and one car damaged; loss $1,700.

Fullerton, Cal.—Dryer & Thompson garage; building and seven cars destroyed; estimated loss $6,000.

Coming Events

* Indicates sanction by A. A. A.

Sept. 15-16, Norfolk, Neb.—Track racemeet under auspices of N. A. Huss.

Sept. 18-19, Hutchinson, Kan.—Kansas City State Fair track racemeet.

Sept. 18 and 26, Springfield, Ill.—Illinois State Fair Association's track racemeets.

Sept. 26, Memphis, Tenn.—Track meet Tri-State Fair.

Sept. 26, Kalamazoo, Mich.—100-mile track meet Inter-State Fair.*

Sept. 27, Pleaston, Cal.—Track meet Alameda County Fair Association.*

Oct. 2, Trenton, N. J.—Track meet Inter-State Fair.

Oct. 2-3, Oklahoma City, Okla.—Track meet Oklahoma State Fair.

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The Strongest Argument the Dealer Can Offer

THE trade mark "*National*" is more than the name of a beautiful new six cylinder car. It is what the dealer can depend upon; it is his guarantee.

¶ Seasons come and go; changes in design and improvements in machinery but the *National* maintains the same firm position in the industry. *National* reputation is not built upon temporary structure; not upon untried inventions; not upon seasonable styles alone, but is built upon reliable *whole* cars. Select at random any season, whether during the popularity of the Four or during the reign of the Six, and you find the *National* always a leader. With the *National* it is not cylinders, starters, body lines or the like—it is *complete* cars. *National's* value is accumulative, every season being built upon the one preceding and not foreign to it. *National* has nothing to "live down;" nothing to disguise and no business diseases to be cured.

¶ Back of the trade mark "*National*" is security for dealer and owner. The name is the symbol of satisfaction; it inspires confidence; it obligates the builders to warrant this responsibility. This is what "*National*" means, a trust given us to perpetuate. This is the fifteenth season for the *National*, not fluctuating years of the hit-or-miss variety, but steady, sound and successful seasons.

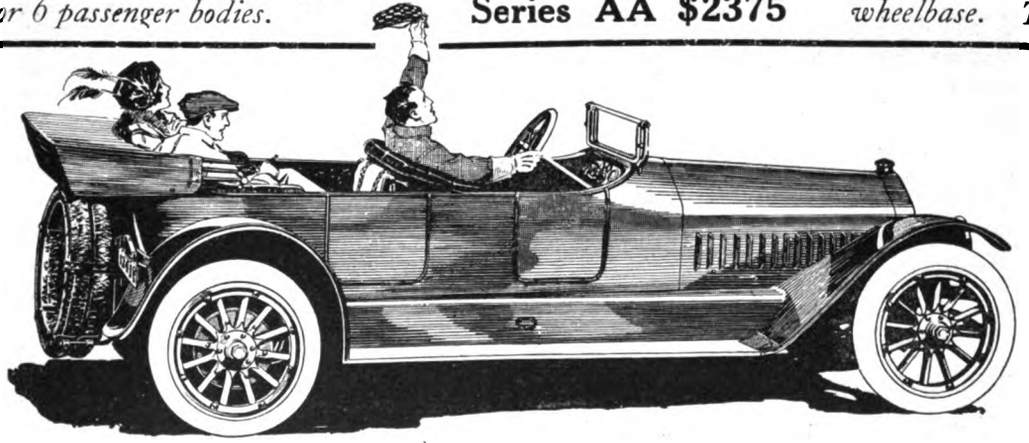
¶ We ask you straight from the shoulder, "Is not such a reputation, such a reliable and efficient factory the kind you want to do business with now?" At least, play fair with yourself and the friends who take your judgment and investigate our dealers' proposition.

Cantilever springs—Electric starter and lights—Fully equipped. National Sixes made in four types, 2, 4, 5 or 6 passenger bodies.

New Six

Series AA $2375

Six cylinder motor giving more than fifty-five horse power and better than fifteen miles per gallon. 132-inch wheelbase. Tires, 36 x 4½.



National Motor Vehicle Co., Indianapolis, Ind.

Digitized by Google

The New SAXON $395

F. O. B. Detroit



The Automobile Market that Offers the Greatest Opportunity to Dealers

Getting "the Jump" on the New Market

At this stage of the automobile industry ***no greater opportunity*** offers itself to a dealer than selling Saxon cars.

This is true because the Saxon, by reason of its low price and low maintenance cost, commands the ***widest market*** of prospective purchasers.

That people of moderate income form a fertile field for the disposal of Saxons is proved by the fact that in the four months' time since Saxon shipments were begun over 6,000 sales have been made.

This is a record—***more*** than any other company ever shipped in the same length of time after starting in the automobile business.

How We Bettered the Saxon

Although we have been so busy supplying Saxon dealers, we have, at the same time, been constantly introducing improvements and adding refinements.

Dealers of long experience have been quick to declare that they have never known a car so nearly perfect at the start, or that has been so rapidly and thoroughly made more appealing to the public.

Daily the volume of orders is mounting higher and higher. The name and fame of the Saxon is spreading by word of mouth of enthusiastic owners all over the country.

We knew there was a tremendous field for a thoroughly good, good-looking, dependable two-passenger car of low operating cost. ***And now we've proved it.***

The Saxon has found its market and the market is welcoming the Saxon.

Quality in Known Quantity

The Saxon has proved its high quality in every motoring test, both public and private, to which it has been subjected. It has demonstrated that it is the ***greatest two-passenger automobile*** in the whole world at anywhere near the price.

It is sturdy and powerful enough for any emergency of the road. It is built to give great comfort and convenience, and it is more roomy than any other. It is a splendid looking car, too, with distinctive lines.

It can be said, unreservedly, that for the man who desires a two-passenger machine, the Saxon is the ***best buy at the price.***

New Saxon Gives New Impetus to Sales

The new Saxon, with running boards and 38 other advanced features, has given new vigor to Saxon sales all over the country.

Owners are warm in their praises of the new Saxon and pleased owners make busy dealers.

No other car in the world offers more value for the price than the Saxon, because no other company is content to accept so small a profit per car. But we believe that giving big value means larger and larger sales and results in enabling dealers to make quick "turnovers."

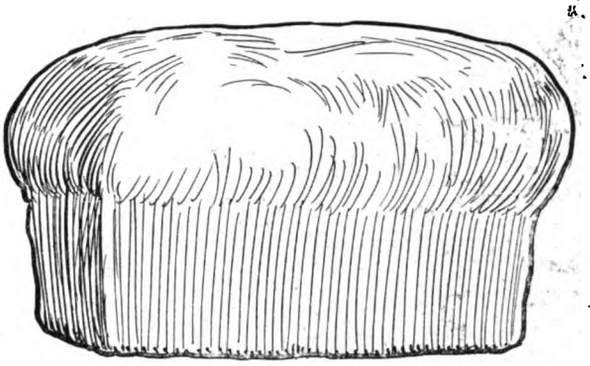
Our plans for a new and exceptionally liberal dealer proposition are now complete. If ***you*** are interested in making money, we will probably hear from you ***at once.***

There May Be Open Territory for You—*Write!*

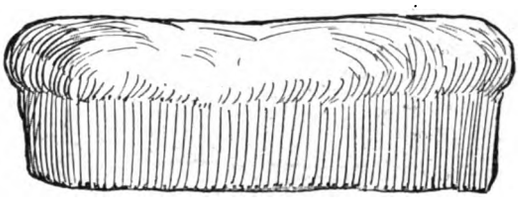
Saxon Motor Company, Detroit, Dept. N

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MRS. JONES' BREAD



MRS. SMITH'S BREAD



Did you ever hear this comparison?

Our Mr. Nightingale (you know him) springs it often and claims it's original.

"Mrs. Jones and Mrs. Smith make bread from the same flour, the same yeast, in the same oven and bake it over the same fire—

"But Mrs. Jones' bread stands up, while Mrs. Smith's bread breaks down."

Mrs. Jones Knows How

NIGHTINGALE SAYS THAT'S WHY

THE WILLARD GLBA BATTERY

GLBA
TRADE MARK REGISTERED

THE WILLARD GLBA BATTERY

STORAGE BATTERIES STAND UP

Anyway, the GLBA does stand up for all of those whose names appear in our "Index to Automobile Manufacturers Who Have Contracted for GLBA Storage Batteries" and who continue using it from year to year.

Look for our "Index" in Motor and Motor Print—it's illuminating.

WILLARD STORAGE BATTERY CO.

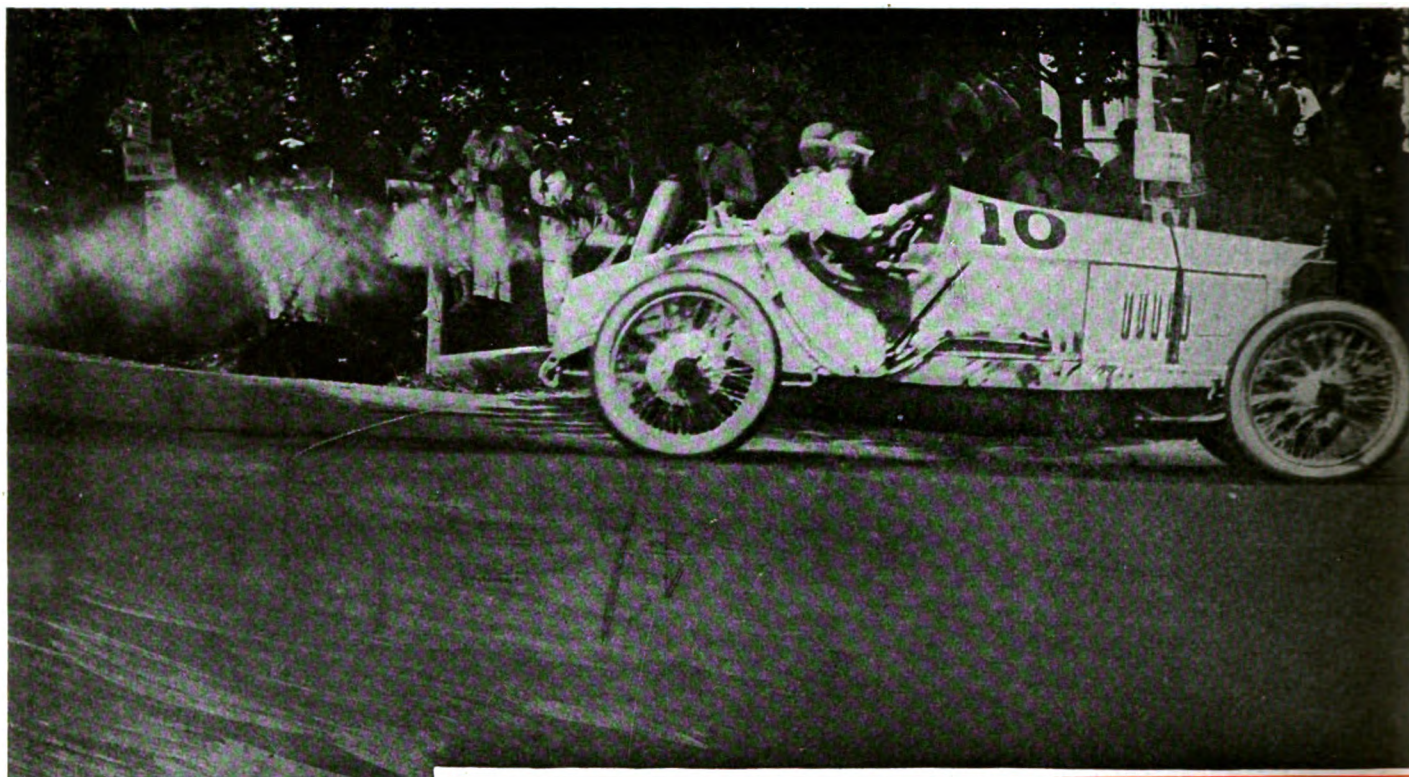
Cleveland, Ohio

New York Branch: 228-230 W. 58th St.
Chicago Branch: 2241 Michigan Ave.
Detroit Branch: 736-740 Woodward Ave.
San Francisco Branch: 821 Monadnock Bldg.
Indianapolis Branch: 318 North Illinois Ave.

SERVICE STATIONS IN ALL PRINCIPAL CITIES IN THE UNITED STATES, CANADA AND MEXICO

116

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THE WORLD'S GREATEST DRIVERS USE THE WORLD'S GREATEST TIRES

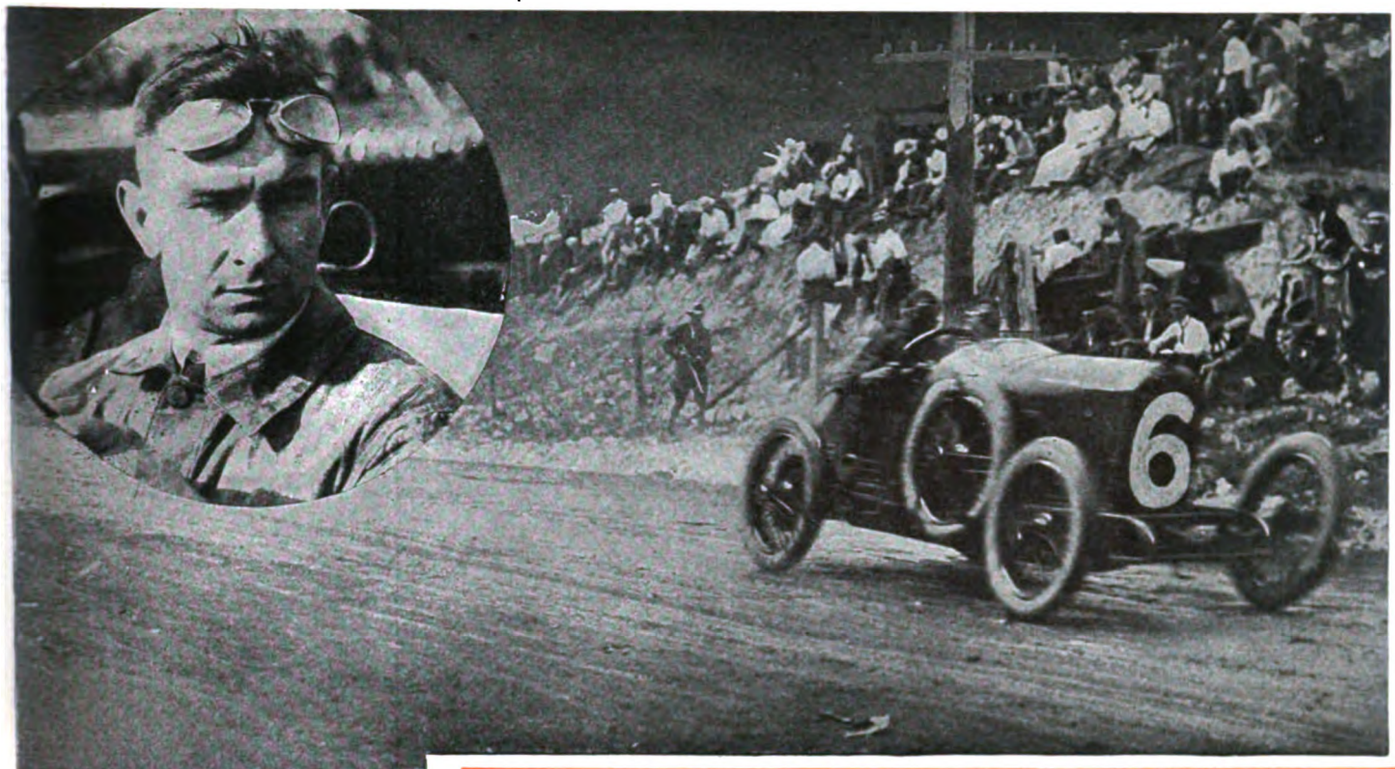
Nassau

Ralph DePalma, unquestionably the world's greatest road race driver, winner of both big events at Elgin this year, uses only NASSAU Tires. He says: "If I had to go back to the days of driving on doubtful casings I'd quit the racing game."

His enthusiasm at having at last found casings that would actually stand these frightful strains cannot be overstated. The moment he arrived on American soil a few weeks ago, he immediately telegraphed for his supply of NASSAU Shoes. In fact he will race on no other, because while there are tires that have made exceptional showings on boulevard courses, no other tire has ever stood a fraction of the abuse given these NASSAUS on Illinois roads at Elgin.

DePalma won the big race by 40 seconds without tire change. One tire change would have lost the race.

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THE WORLD'S GREATEST RACING CARS
TRAVEL EXCLUSIVELY ON NASSAU

Tires

Bob Burman, unquestionably the "World's Speed King," used these famous tires on his Blitzen Benz and on his Peugeot. He selects NASSAU Tires because he has proved to himself and to tremendous audiences on tracks everywhere that NASSAU Tires are as he says, **"the best tires in the world."**

The great Mercedes, Peugeot and Benz Racers, the fastest ever built, use NASSAU Tires because they last.

In the races at Elgin five cars ran equipped with NASSAU Tires, and by all these cars only **one tire change was made.** Even this was not because the tire blew out, but because it was pulled off the rim by a terrific side strain.

If you want the tires demanded by the men of fame, whose fame and lives depend upon the reliability of their tires, get NASSAU, the toughest, longest wearing tire in the world.

MANUFACTURED BY

THERMOID RUBBER COMPANY

Factory and Main Offices TRENTON, NEW JERSEY

BRANCHES

Chicago New York Philadelphia Pittsburgh St. Louis Indianapolis
Detroit San Francisco London Berlin Paris

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Studebaker

IT is a significant fact that in spite of war in Europe and a general feeling of apprehension in this country Studebaker business is largely in excess of any previous year.

Studebaker dealers are enjoying a prosperous, profitable business.

This is due to two prime causes—

FIRST—We in this country have entered upon what promises to be a season of exceptional prosperity—

SECOND—Studebaker cars at this year's prices are the most amazing value that has ever been offered in the whole history of motor car building.

Studebaker values—with Studebaker reputation back of them—are recognized everywhere that motor cars are sold.

That is one reason that Studebaker dealers are almost universally successful dealers.

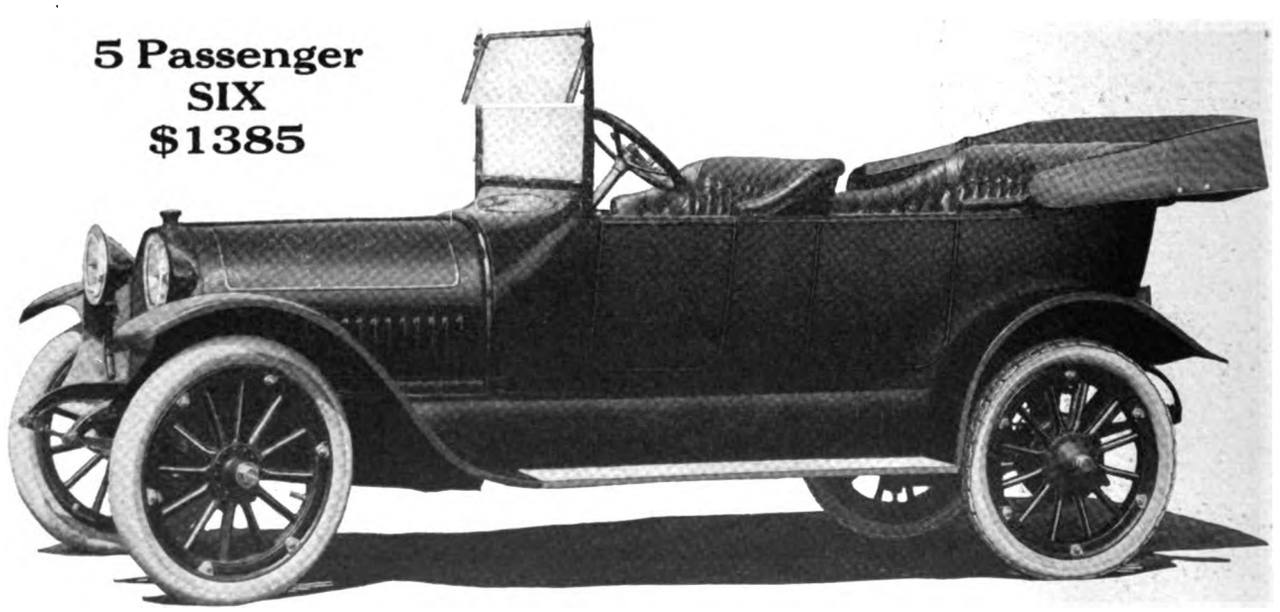
Rearranging of territories for the coming year makes possible a number of new dealer connections and we would be glad to hear from men of character and ability who might be interested in the Studebaker proposition.

Prices
F. O. B. Detroit

Four Roadster - -	**$985**
Four Touring Car -	**985**
5 Passenger Six - -	**1385**
7 Passenger Six - -	**1450**

We extend a cordial invitation to all dealers when in Detroit to inspect Studebaker plants.

STUDEBAKER - DETROIT

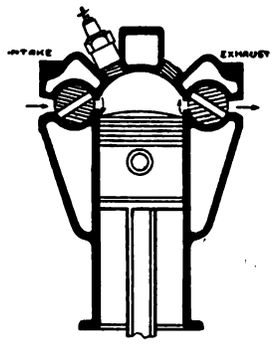


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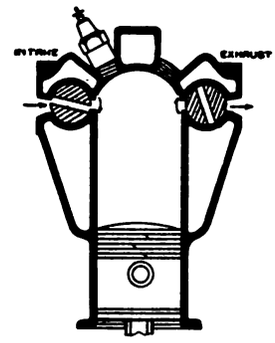
This Motor Car

Speedwell ROTARY

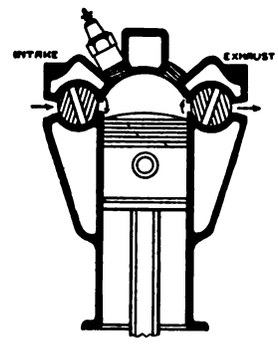
Now entering its Second Season, has not only "Made Good" but has Surpassed all Expectations and Promises



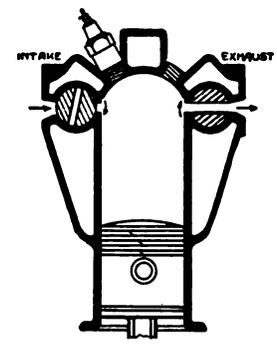
INDUCTION



COMPRESSION



EXPLOSION



EXHAUST

Big handsome Speedwell Rotary Sixes hold attention in any company because of their superb lines and outfitting, because of their staunch perfection in all the prevailing units of chassis construction.

The vital feature that differentiates them from all other cars is the motor—the Speedwell Rotary Valve Six Cylinder Motor. No other motor can show such **simplicity, freedom from valve wear, silence, lack of vibration, power, efficiency** and **long life.**

These advantages are no longer unproven claims but are advantages that have given complete fulfillment in the service to Speedwell Rotary Six users all over the country.

Speedwell Rotary Sixes are built in one chassis model:—wheelbase 135 inches; Westinghouse starting, lighting and ignition; Golde-Patent one-man top; and finest and most complete equipment throughout.

Four and Five Passenger Touring Models, $2850
Six and Seven Passenger, Touring Models, $2950

The Speedwell Motor Car Co.

DAYTON, OHIO

New catalog and complete information upon request

An idea of the Speedwell Rotary Valve design and its simplicity may be gained by reference to the four cycles of valve operation given in the rough diagram above. The arrows within the cylinders indicate the direction of rotation of the valves—the arrows outside indicate the direction of live gas passing in and the exhaust gas passing out.

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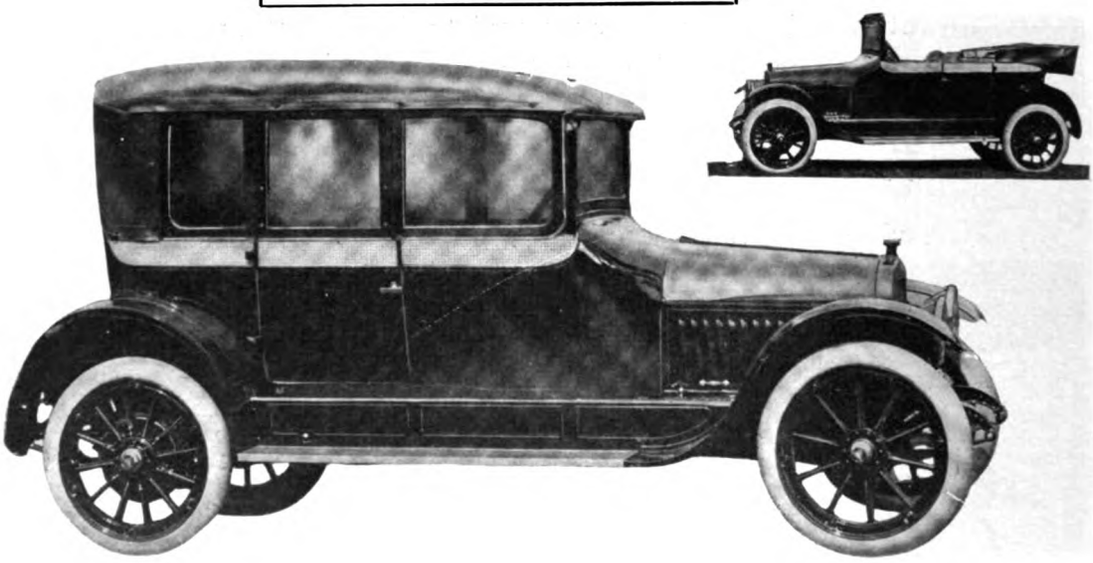
SPRINGFIELD
CONVERTIBLE BODIES

Sedan Type

We believe this body answers the demand for a convertible body applicable to the medium size chassis, such as the four and light six cylinder motors.

Then too, its cost, $800 added to the price of any medium sized chassis still holds the total cost of this equipment somewhat below the price of a standard two or three passenger coupe and much less than the price of a limousine.

The Springfield Convertible Body accommodates five passengers comfortably — all facing front.



We can furnish this body in a wide range of body colors and upholstery. Price $800.

Our discount to automobile dealers together with the selling advantages the Springfield Convertible Body offers, form a strong incentive for your investigation.

THE SPRINGFIELD METAL BODY COMPANY, Springfield, Mass.

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The use of Hyatt Roller Bearings in your car insures you against bearing trouble.

These bearings are first of all correct in principle—they are made of the finest alloy steels scientifically heat treated—by expert workmen—in a big factory equipped with special machinery for their production.

The fact that Hyatt Quiet Bearings are used by nearly every automobile manufacturer in America speaks for the wonderful service rendered by them.

Two books, one about motor car bearings in general for prospective purchasers, the other for automobile owners, will be sent on request.

"Hyatt Quiet Bearings"

HYATT ROLLER BEARING CO.
DETROIT. CHICAGO
NEWARK. N.J.

HY·ROL·EX·ROL
TRADE MARK REGISTERED U.S. PATENT OFFICE

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TIMKEN-DETROIT WORM-DRIVE AXLES

Talking slowly as is his wont, speaking with authority that none can gainsay—Time, the tester of all things, is telling some truths about Timken Products.

What Time is Telling About Timken Worm-Drive



Time says that Timken has built an organization of able experienced men which is one-hearted in its aim to make axles that give the greatest use-service-value to the ultimate user.

Time says that Timken has been eminently successful in putting this use-service-value into its commercial car axles.

Time says that for years Timken has tried and tested all types of worm drives and of axles. Has searched and studied, in Europe and at home.

Time says that David Brown & Sons, of Huddersfield, England, have been worm gear specialists for many years and have developed exclusive and wonderfully efficient generating, grinding and testing machinery for producing the time-tried David Brown "straight" type of worm gearing. That the union of David Brown and Timken interests has brought together the men who know worms best and the men who know axles best.

Time says that the Timken-Detroit Axle Co. has been making worm drive axles commercially for a longer time than any other axle maker. That it has been the pioneer whom others tardily copy.

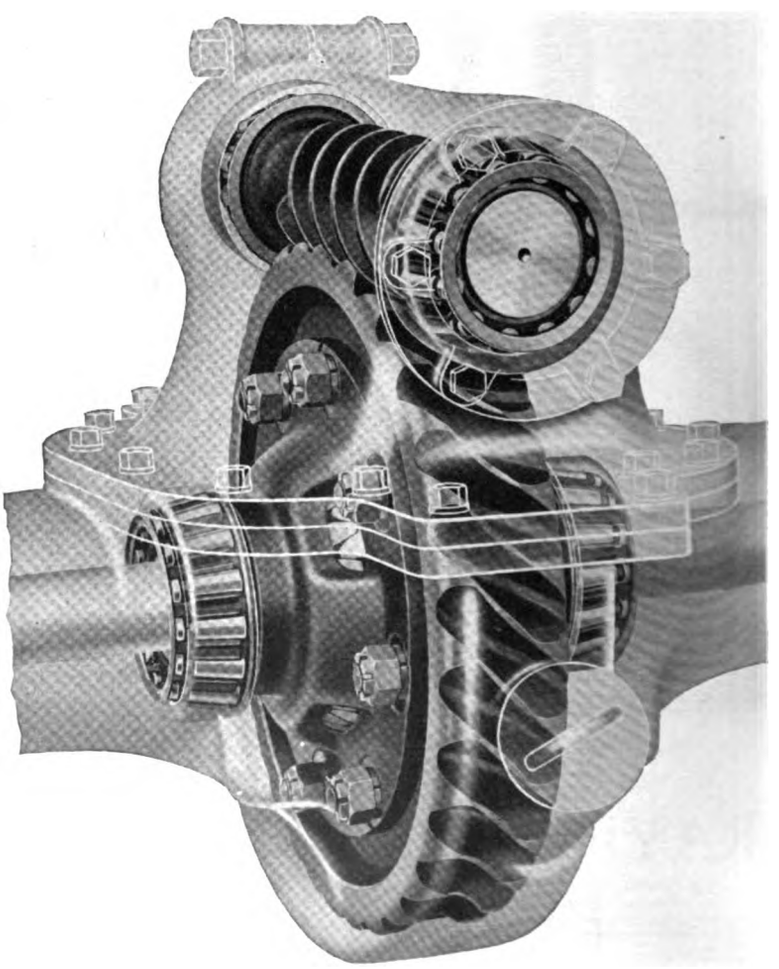
Time says that more commercial car builders use Timken-Detroit than use any other make of worm drive axle.

Time says that these car builders have adopted Timken Axles only after long, severe tests under their cars.

Time says there are more Timken-Detroit Worm Drive Axles in service under commercial cars than there are worm drive axles of any other make.

Time says that the Timken Tapered Roller Bearing has served as though it had been invented especially for worm drive-work—where heavy end-thrust piles on radial load.

These, and many other things, Time is telling to those who want to know the facts that only Time can tell.



The Timken-Detroit Axle Co.
Detroit, Michigan

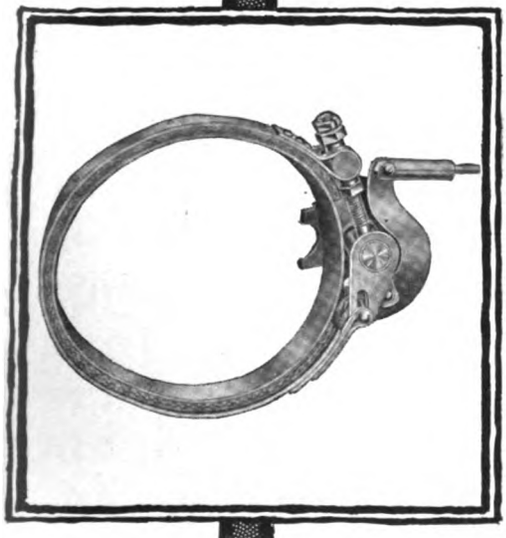
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Raybestos

The PRODUCT of BRAKE SPECIALISTS

No other concern in this country making brake linings has ever designed or manufactured brakes or brake mechanisms.

Just read that statement again, and let it sink in.



Our career as manufacturers of automobile brakes and brake linings has been one of CREATION—not IMITATION.

There has not been one single advance in the science of making brake linings which has not been conceived, developed and produced in our laboratory or shops.

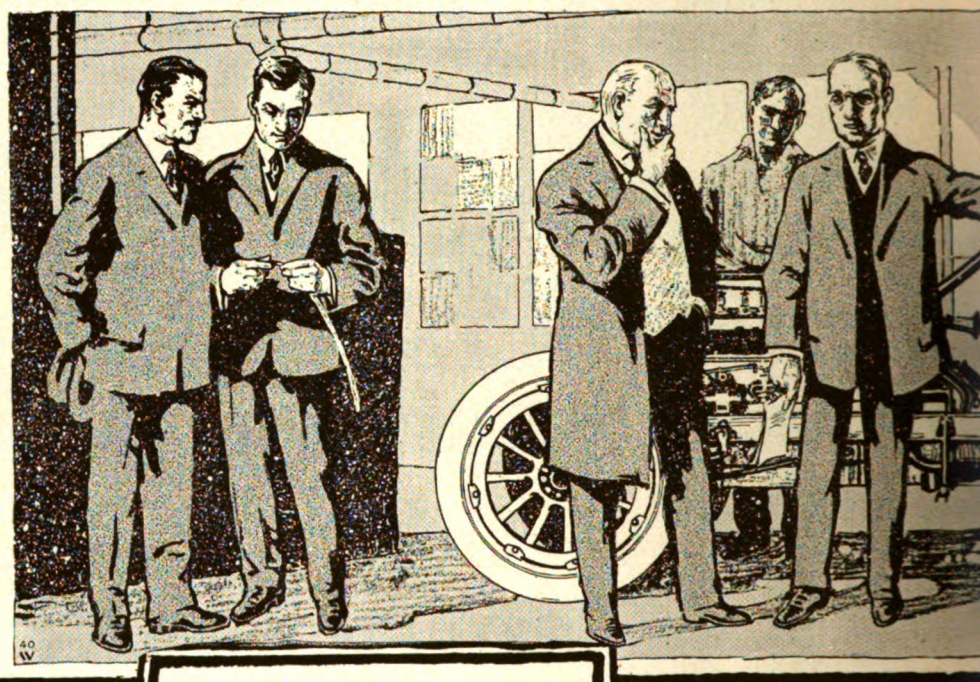
To such an extent has the development of RAYBESTOS from its earliest conception to its present perfection influenced brake lining manufacture that we feel like joining the Lancia Company in quoting—

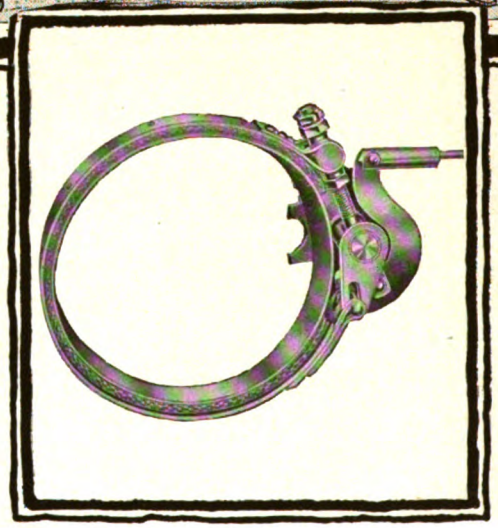
"They followed me and they copied me, but they couldn't copy my mind,
And I left them gasping and floundering, a year and a half behind."

RAYBESTOS, THE PRODUCT OF BRAKE SPECIALISTS

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Unless a man possess an intimate knowledge of the fundamentals of a mechanical problem he undertakes to solve, how can he hope to accomplish it successfully?

BRAKES and BRAKE LININGS have been our specialty for years—BRAKES as well as BRAKE LININGS.

Our first activity as manufacturers was in the production of BRAKES for pleasure cars and it was not long before DUPLEX BRAKES had won a most enviable reputation for excellence in design and performance.

As BRAKE specialists we have kept pace with the progress of automobile design and the development of DUPLEX BRAKES has evidenced a most intimate knowledge on our part of automobile BRAKE design and construction. In a great many cases where DUPLEX BRAKES are not exactly adaptable for certain cars or trucks, we manufacture BRAKE equipment for them according to the design and specifications of our engineers.

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There have been many cases where we have made suggestions to automobile engineers—sometimes regarding design, sometimes regarding construction. In some cases these suggestions effect a saving in cost, and quite as often they effect an improvement in mechanical details.

Right here we want to make a point—and this point outlines our policy: when we are asked to manufacture a Brake equipment which we know to be faulty, and the suggestions we make as to its correction are turned down or overruled, we refuse the business. We find that it is preferable to lose a contract occasionally than to sacrifice our reputation.

Business is business but reputation is something we refuse to pawn.

Think of this when you select the BRAKE LINING for your cars.

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Prestige

The RESULT of CONSCIENTIOUS ENDEAVOR

The older members of the automobile engineering fraternity will remember that RAYBESTOS was the first real criterion of BRAKE LINING quality, service and far-sighted economy. Since its inception, RAYBESTOS BRAKE LINING has been required to sustain the prestige we have built up as BRAKE specialists and we believe that our experience has been broad enough to cover every phase of automobile BRAKE and BRAKE LINING knowledge.

Practical experience in the manufacture of BRAKES and our close application to automobile BRAKING problems has given us an intimate engineering foundation for the development of a better BRAKE LINING than is possible for any other manufacturer to possess.



No other concern in this country making BRAKE LININGS has ever designed or manufactured BRAKES or BRAKE mechanisms.

Think of that when you select the BRAKE LINING for your cars.

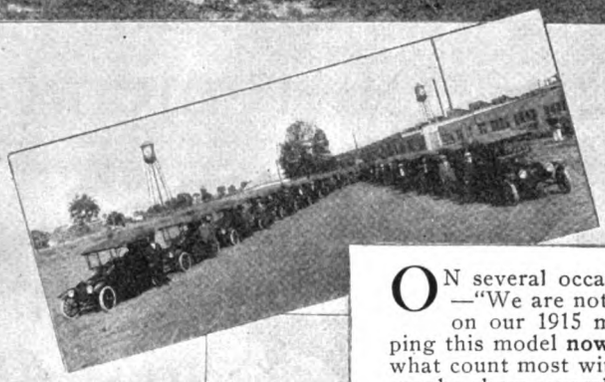
THE ROYAL EQUIPMENT CO.

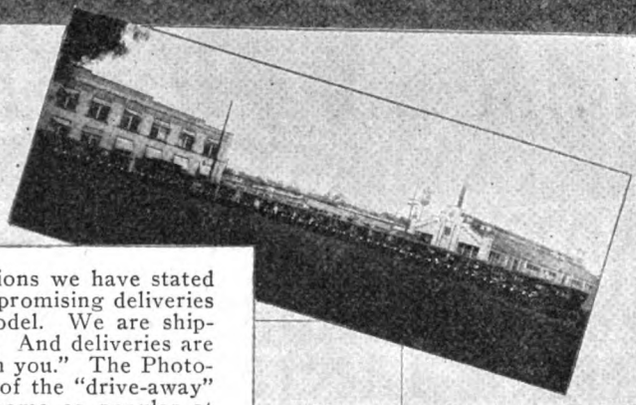
1379 Bostwick Ave., Bridgeport, Conn.

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Pictures *that speak* Louder *than* Words



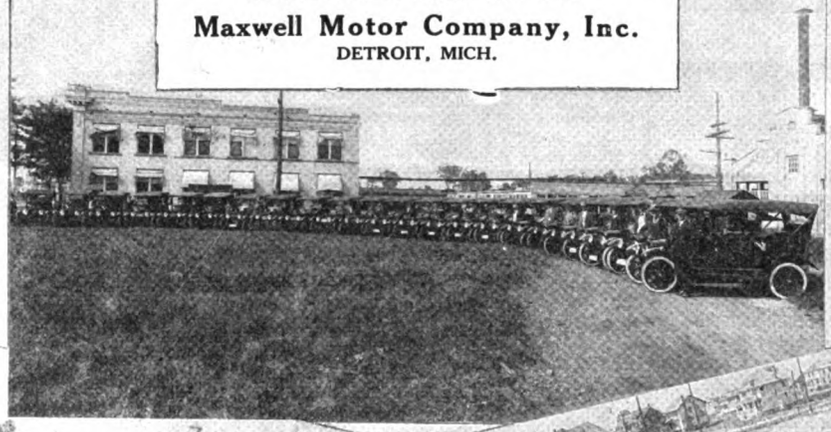


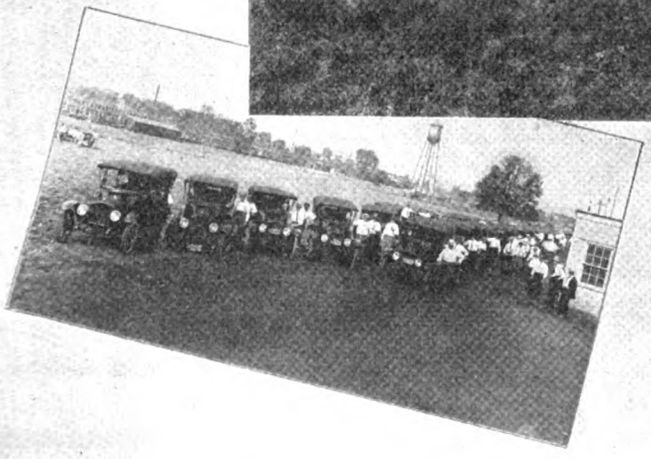


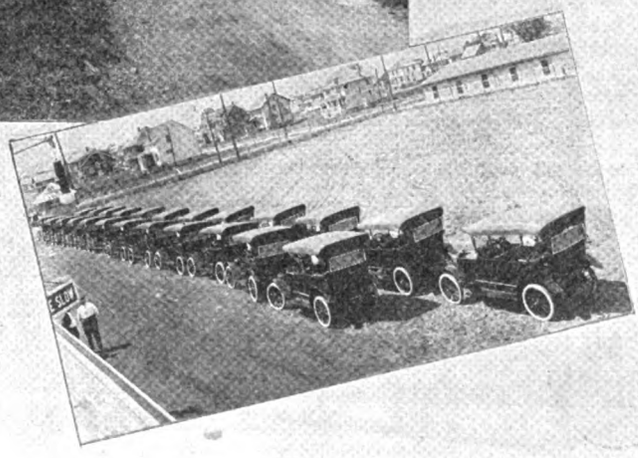
ON several occasions we have stated —"We are not promising deliveries on our 1915 model. We are shipping this model **now.** And deliveries are what count most with you." The Photographs show several of the "drive-away" days which have become so popular at the Maxwell factory. Some territory still open. Write, call or wire for details on our agency proposition—but above all, **hurry.**

Address C. C Stebbins, Sales Dept.

Maxwell Motor Company, Inc.
DETROIT, MICH.







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Seven Solid Reasons for Using Gurney Bearings

What are the facts behind the Gurney success?

Distinctive features of Gurney Ball Bearings.

1. Unique Design. Full Type, No Filling Slots, Full Depth of Raceways.
2. Thrust Capacity that puts them in a class by themselves, in Radio-Thrust Bearings up to 100 per cent.
3. Single piece, Jointless Separator, permitting the maximum number of the minimum size of balls.
4. Raceways ground to the contour proved and admitted to be most efficient, and always so ground.
5. Rings ground to a degree of concentricity unapproached by any other make.
6. Made to a degree of accuracy unequalled by any others.
7. Uniformity. Every ring that goes through our factory is not only produced by processes that give it these distinctive characteristics, but is subjected to drastic tests, to the most minute and rigid inspection, which none but the perfect can pass. If it were not for our wonderful processes of production we could not afford to subject our products to the hardships of testing and inspecting they have to undergo. The latter is made commercially possible by the former. For these reasons our bearings have, as perhaps the most important of all, this quality of uniformity.

CAPACITY GURNEY ENDURANCE

Gurney Ball Bearing Company

Jamestown, N. Y.

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New Chalmers Prices

"Light Six" Touring Car
(Model 26-B)

$1650

(*Fully Equipped*)

"Light Six" 6-passenger Touring Car - -	$1725
"Light Six" 2-passenger Coupelet - - -	1900
"Light Six" 5-passenger Sedan - - -	2750
"Light Six" 7-passenger Limousine - - -	3200

Chalmers Motor Company, Detroit

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COPLEY-PLAZA
BOSTON

THE Copley-Plaza became Boston's Finest Hotel from the moment it opened its doors to its patrons. For years to come it will retain this prestige.

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Know NET Prices

Discounts Are Misleading—Test Them Out

When an automobile tire customer talks "special discount" to you, sit down and figure out for him just what it means, or, rather, what it **doesn't** mean.

Remember that some tires are listed so high that these "discounts" must be offered to bring them anywhere within reason.

And, even after the "allowance" **has** been made, the **net** price often exceeds the Goodyear price.

Here's an Example

A Goodyear All-Weather Tread casing, size 34 x 4, sells for $28.50. Yet many "discount" tires, even after the reduction has been allowed, still call for more money than this.

And the same money that buys other tires will often buy a half-inch larger Goodyear. Some ask as much for a 36 x 4½ as a Goodyear 37 x 5 costs. And other sizes are over-priced proportionately.



Discounts Mislead

This means that buyers of "discount" tires really pay more money without realizing it—and when you show them this you make friends of your customers.

And friendly customers are the ones that work for you.

When you add to price argument the four Goodyear advantages found in no other tire, you have offered the utmost in tire value. These exclusive features are:

(1) The Goodyear No-Rim-Cut feature.

(2) The "On-Air" cure, which saves the countless blow-outs due to wrinkled fabric.

(3) The Rivet Fabric breaker strip, a patented feature that reduces by 60 per cent the danger of loose treads.

(4) The All-Weather tread—in all ways the greatest of anti-skids.

Safe Selling

Remember that Goodyear production runs up to 10,000 tires a day. This, with master equipment and exclusive methods means minimum manufacturing costs.

Because of this it is not necessary to water Goodyear prices to allow for false discounts. The Goodyear price poster shows Goodyear figures plainly. It answers and settles all questions of price as between other tires and Goodyears. If you haven't already received one of these posters write for one today to hang in a conspicuous place.

Confidence

Goodyears inspire confidence. There must be something basically wrong where a tire buyer has to be bribed by a "Discount" that is **not** a discount in order to effect a sale. The one-price, one-quality Goodyear standard always means safety, service, and satisfaction.

The Goodyear Tire & Rubber Company, Akron, Ohio

Toronto, Canada **London, England** **Mexico City, Mexico**

Dealers Everywhere. Branches and Agencies in 103 Principal Cities

Write us on Anything You Want in Rubber

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THE OVERMAN *Cushion Tread Pneumatic* TIRE

by its new method of construction offers a practical solution of tire problems



Durable

We guarantee the Overman Tire for 5,000 miles. If any Overman Tire fails to give that mileage we will make the purchaser an allowance for the difference, charging for mileage on a basis of five thousand miles, said allowance to apply against future purchases. The tire is **better than our guarantee,** and with proper care will give greater mileage.

Reliable

While not absolutely puncture-proof, punctures with the Overman Tires are very **rare** occurrences. This fundamental and disagreeable weakness of all pneumatic tires has been almost eliminated. **Blow-outs and rim-cuts are practically unknown.**

Dealers

who want to handle a tire built to give service and not to be cheap, should send for our proposition

Permanently Non-skid

OVERMAN TIRE COMPANY

1853 BROADWAY (at 61st Street) NEW YORK

BALL BEARING FACTS

Automobile manufacturers who have been using foreign makes of ball bearings need not worry over the war



2,000 men, skilled in manufacturing ball bearings, are at your command. Works of the New Departure Manufacturing Company.

The New Departure plant is producing between ten and twelve thousand bearings per day and this is not its maximum capacity. We can guarantee your specified deliveries not only now, but for any length of time in the future. We can also guarantee the quality of New Departure bearings to be the equal of any.

We solicit an opportunity to demonstrate to you our ability to completely meet your requirements now.

The New Departure Manufacturing Company, - Bristol, Connecticut

Western Branch: 1016-17 FORD BUILDING, DETROIT, MICHIGAN

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Another Complete

BOSCH MAGNETO VICTORY

Chicago A. C. Cup Race

1.	Mercedes	De Palma	Bosch Magneto
2.	Stutz	Anderson	Bosch Magneto
3.	Peugeot	Mulford	Bosch Magneto

Every car to finish used a Bosch Magneto

Elgin National Trophy Race

1.	Mercedes	De Palma	Bosch Magneto
2.	Mercer	Pullen	Bosch Magneto
3.	Stutz	Oldfield	Bosch Magneto

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There is no ignition the equal of magneto ignition — there is no magneto the equal of the Bosch. Every prominent race proves this to be so.

BE SATISFIED **SPECIFY BOSCH**

Correspondence Invited

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Chicago — Detroit **San Francisco — Toronto**

Over 250 Service Stations

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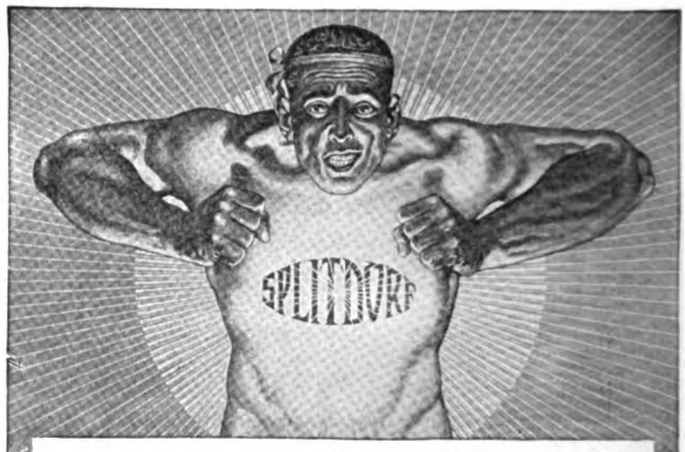


"WHITNEY" KEYS FOR FORD CARS

In order to supply the demand for "Whitney" Keys for Ford cars we are now prepared to furnish a box containing 12 keys especially assorted for these cars.

Each box contains a circular describing each key, giving size and where used. Every garage and repairman should have a box of these keys on hand. They cost little and are very convenient.

THE WHITNEY MFG. CO.
HARTFORD, CONN.



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Don't be afraid to call upon us. Ignition is our business. If you are not getting the work out of your present equipment, be it SPLITDORF or any other make, just let us hear from you. We have factory experts and every possible facility at our immediate command to correct your troubles, and such a combination, backed up by years of experience and a willingness to give the service, must appeal to every owner of a hydrocarbon engine.

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DALLAS	402 S. Ervay St.	PHILADELPHIA,	210-212 N. 13th St.
DAYTON	427 E. 3d St.	SAN FRANCISCO	1028 Geary St.
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Str. City of Detroit III.
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Operating Between Detroit and Buffalo

The Delights of a Lake Trip

REST after work is necessary to human endurance, and holidays are a wise economy. The Great Lakes of America offer more vacation opportunities than any other source in the country. The steamers of the Detroit and Cleveland Navigation Company, operating to all important ports, are unrivalled in point of elegance, comfort and quality of service—the perfect freedom offered by the saloon and promenade decks, the commodious state rooms, luxurious furnishings and excellence of cuisine make life aboard these floating palaces a solace to the weary mind and body.

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Daily service is operated between Detroit and Buffalo, Detroit and Cleveland; four trips weekly between Toledo, Detroit and Mackinac Island, the historic summer resort of the North Country; and from June 25 to Sept. 10 a special steamer, two trips weekly, will be in commission between Cleveland and Mackinac Island, stopping only at Detroit every trip. During July and August special daylight trips between Detroit and Cleveland. From June 10 to Sept. 10—daily service between Toledo and Put-In-Bay.

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Tickets reading via any rail line between Detroit and Buffalo, Detroit and Cleveland will be honored for transportation on D. & C. Line Steamers in either direction. Send 2 cent stamp for illustrated pamphlet and Great Lakes Map. Address L. G. Lewis, G. P. A., Detroit, Mich.

Detroit & Cleveland Navigation Co.
Philip H. McMillan, Pres. A. A. Schantz, Vice-Pres. and Gen. Mgr.
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Steamers arrive and depart from Third Avenue Wharf, Detroit.

Electrically Heated Warm Hand Wheel FOR Overland Cars



Retail Price

$12.00

Install a Warm Hand Wheel upon your car and you'll forget the discomforts of fall and winter driving. For a Warm Hand Wheel on your car will keep your hands nice and warm regardless of the temperature of the air in which you are driving. And by keeping your hands warm you are also keeping your body warm even in zero weather.

The Warm Hand Wheel is electrically heated and can be installed upon any car using a lighting or starting system. On the Ford car it is heated by the surplus current furnished by the magneto.

We carry in stock Warm Hand Wheels that can be installed in 20 minutes to any of the following cars—Overland, Studebaker-Four, Chalmers, Maxwell 25, King, Velie Light Four, Hupmobile, Krit and Ford. Special wheels will be made for any others.

Warm Hand Wheels are sold under a guarantee of satisfaction or money back.

Live dealers will be interested in our proposition to them. Write today.

Warm Hand Steering Wheel Corporation
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Why put up with frozen radiators, cracked water jackets, etc., when for a small investment you can keep your car always in perfect condition?

Why not make the necessary repairs in a room just as warm and comfortable as the living room of your home.

The AUTO-HOT Home Garage Heater

provides a modern convenience you have long expected—an appliance, for heating your garage, with every element of danger removed.

Keeps the car dry and prevents rust. Assures an instant response to the first turn of the crank or the first touch of the starter button. Burns either artificial or natural gas and costs but a few cents daily to operate.

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For sale at almost all artificial gas companies

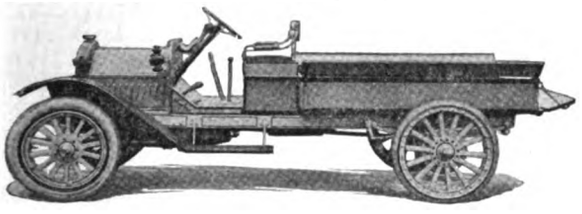
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INTERNAL GEAR DRIVE

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1500 Lbs. Capacity



$1290.00
Chassis in Lead

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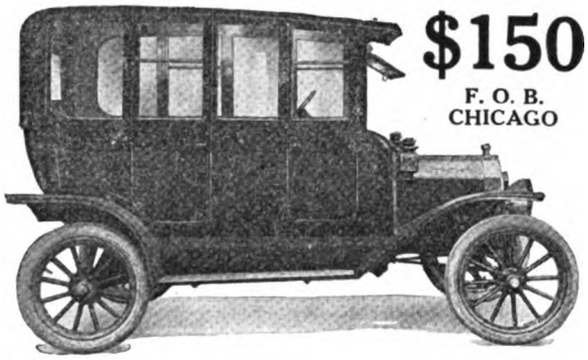
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$150
F. O. B. CHICAGO

Limousine luxury, supreme elegance and beauty are embodied in the MANDEL LIMOSETTE. **Every Ford owner** will appreciate its many advantages. One small additional investment gives Ford Car owners every convenience of the modern, high priced limousine. The MANDEL LIMOSETTE insures absolute protection from storm and wind. It is a flush-fitting top—made of wood, metal, and glass. Built exclusively for 1913-14-15 Ford Touring Cars and Roadsters. Equipped with rain vision wind-shield, electric dome light, and handsome cowl dash. The generous overhang in front accentuates the length of the Ford. When attached the LIMOSETTE adds only 75 lbs. to the weight of the Ford Touring Car. Can be attached in less than an hour.

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We want live agents to sell LIMOSETTES in exclusive territory. A big money-making proposition.

300,000 Fords

to be "LIMOSETTED." Gives agents a tremendous field. Every Ford owner will want a LIMOSETTE. Write at once.



$100
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For the Ford Roadster

In design and construction the MANDEL LIMOSETTE for Ford Roadsters is the same as for the touring car. The ROADSTER LIMOSETTE is invaluable for professional and business men who must ride their cars in all kinds of weather. It gives all the comforts and pleasures of the closed car at less than one-half the regular cost. The ROADSTER LIMOSETTE can be attached in about thirty minutes. When attached it adds but 40 lbs. to the weight of the Ford Roadster.

The LIMOSETTE makes the Ford doubly serviceable. Attach it in Winter—detach it in Summer.

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for instantly toning down the blinding glare of your headlights into a powerful, but non-blinding illumination, are indispensable in night driving.

A simple, well constructed appliance consisting of a roll-curtain of translucent fabric, is contained in a neat cylindrical case which is fastened to the top of the headlights. Pressing a pedal draws down both shades and locks them in place; a simple releasing movement allows them to fly back again out of the way.

Motorists find "SAFETY FIRST" Headlight Shades an essential permanent equipment, easily attached to any make car equipped with gas or electricity. Cannot rattle, are rain and mud proof. $10.00 PER PAIR installed.

Mr. Dealer, you can sell 75% of car owners the "SAFETY FIRST" Shades if you will but demonstrate a few times.

Good inducements to dealers. Write for circulars and terms for demonstrating outfit.



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Safety Shaded

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Every Third Electric Built and Sold is a Detroit Electric

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With Bevel Gear Axle		*With Worm Gear Axle*	
4-passenger Brougham Rear seat drive	$2550	Gentleman's Roadster	$2500
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Builders of the Detroit Electric
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Detachable WIRE WHEELS

"The wheel that makes any car modern"

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"41" $3250 132" Wheelbase

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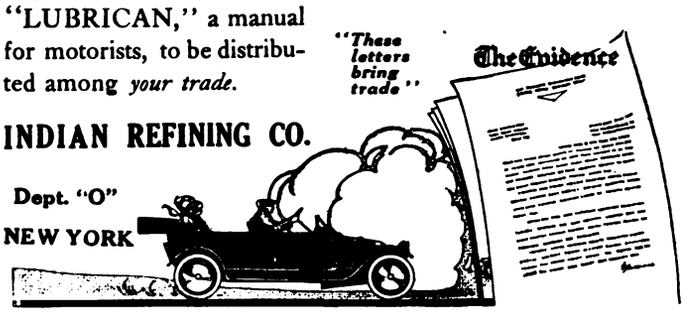
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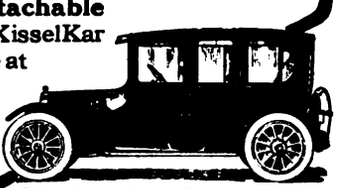
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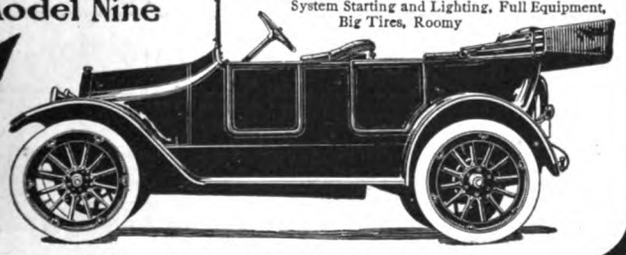
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Model Nine

Driven by "Wheel and Disk"—with 12 years of success behind it. New Streamline Body. Delco Electric System Starting and Lighting. Full Equipment, Big Tires, Roomy

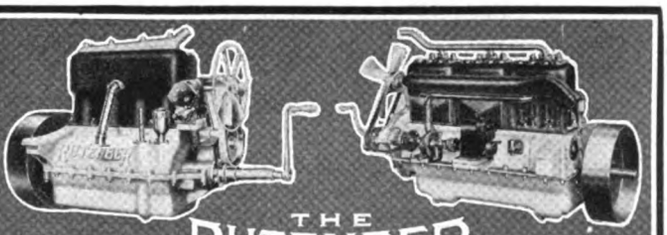


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Write for our proposition and "The Transmission Tells the Story"

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More Power
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MOLINE KNIGHT

Four-cylinder
five-passenger
50 horsepower
128-in. wheelbase

Bosch ignition, Wagner electric starting and lighting, $2500.

The car of the future will not have poppet valves

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Repairs punctures, blow-outs and cuts in casings or tubes, perfectly—makes repair strongest part of tire. No watching, no regulating, automatic in operation. Impossible to undercure or overcure. Has no open flame—no danger if accidentally upset. Anybody can use it. Furnished complete at $3.50 with all repair material. Investigate.
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We also manufacture ASBESTOS CLUTCH LINING and a full line of Asbestos Textiles, Asbestos Metallic Sheet Lining, Gaskets, and Valve Stem Packing.

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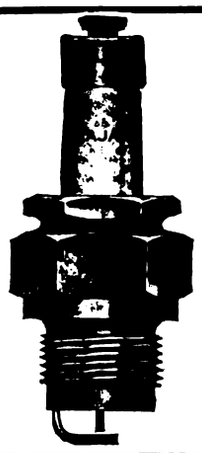
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GIANT PLUG

For pleasure car, motor-boat or truck.

Porcelain and metal parts large and strong.

Extremely simple construction for cleaning — only four parts — shell, porcelain, bushing and gasket.

With proper care, GIANT Plugs can be used for years.

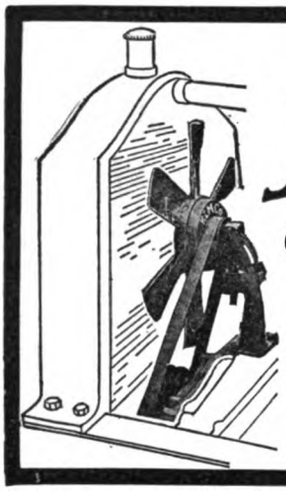
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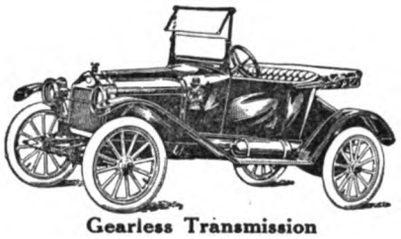
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FAN TYPE GENERATOR

Makes Good
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We still have unassigned territory —our proposition allows you good profit. Write today if you are a hustler. (21)

The Kemco Electric Mfg. Co.
CLEVELAND, OHIO

METZ "Twenty-Two" Roadster



Gearless Transmission

WINNER OF THE GLIDDEN TOUR

$495
Equipped Complete

Fore door body, extra thick tufted upholstery, plate glass rain-vision wind shield, left-hand drive with center control, 4-cylinder 22½ H.P. water-cooled motor, Bosch magneto, Prest-O-Lite tank, extension top, full elliptic springs, artillery wheels, best quality Goodrich clincher tires, 5 lamps, horn, pump, jack, tools. Speed, 50 miles per hour. Beats 'em all at climbing hills. Secure EXCLUSIVE SALE in your territory. Write for terms and catalog "B."

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Coxajusto
ADJUSTABLE TO ANY LOAD



The shock absorbers that have made good on heavy and light cars alike. The adjustment feature found only on Coxajustos is the reason for their superiority. A simple twist of the wrist adjusts them to the load. There is a model especially for the Ford.

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Gives every advantage of ideal ignition with none of the magneto's shortcomings. Ask for Booklet.

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The performance of Eisemann Ignition Systems during the Indiana-Pacific Tour justifies every claim we have ever made for Eisemann efficiency and dependability

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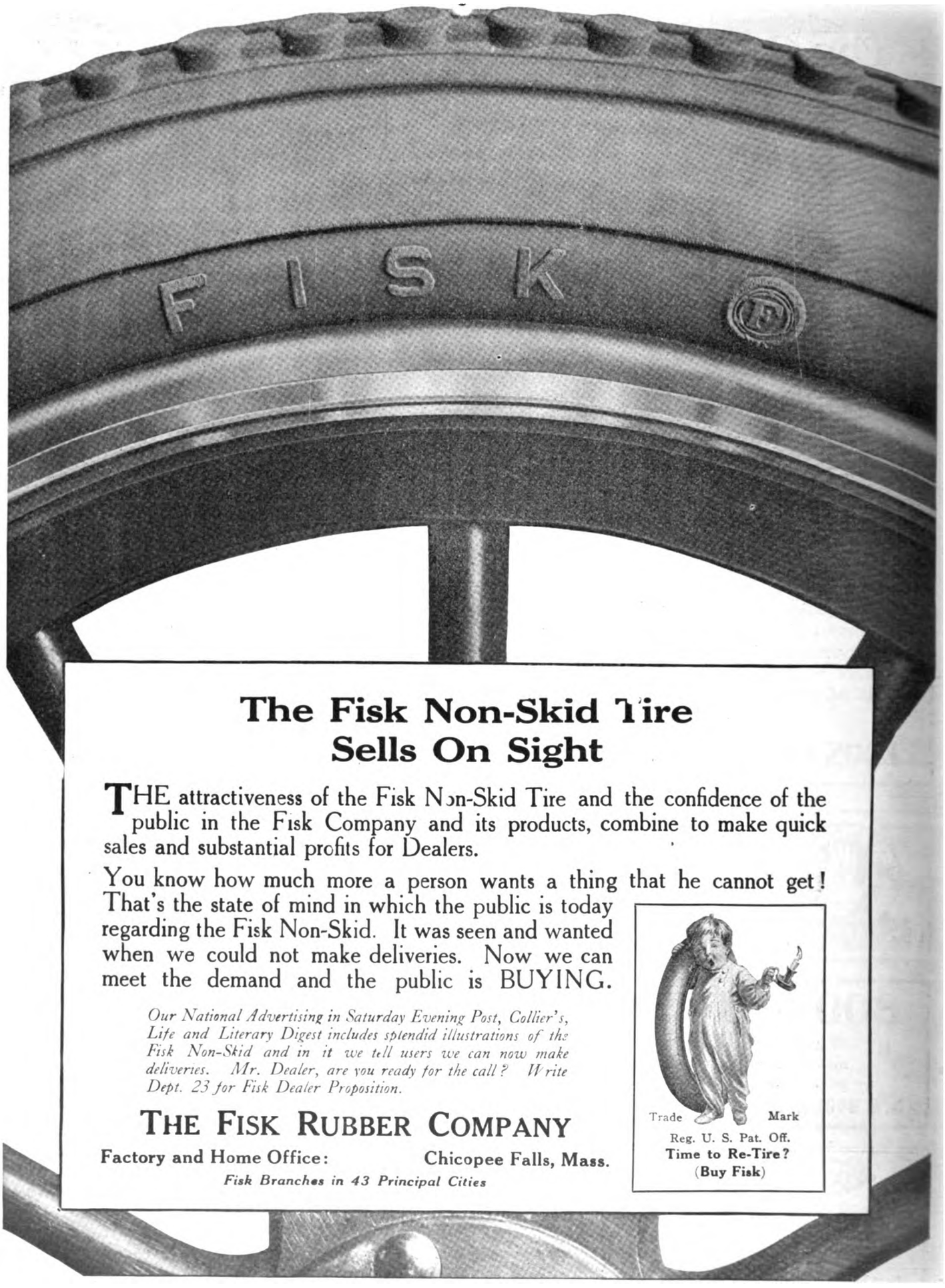
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The matchless mode of motoring reserved to only a few privileged persons in the Old World (at an almost prohibitive price) developed by the Cadillac Company for American Motorists!

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The Cadillac Company has never relaxed for a month, a week, or a day, its patient pursuit of that underlying principle which would prove to be ultimate and final.

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Building and experimenting in turn, with every type from the single cylinder to the six, and from the poppet to the rotary and to the sliding valve, we have been carried forward irresistibly, by the impetus of our own research, to the highest form of frequent-impulse motor—the V Type Eight Cylinder.

It is admitted, we believe, that this Company produced in the four cylinder field, a succession of cars which earned the title "Standard of the World."

Beyond that, loomed for us only one hope and possibility—the promise of a motor in which there would be *no* lapse, *no* pause, *no* hesitation between impulses, but an overlapping of strokes so complete as to produce a flow of power almost literally liquid in its continuity.

We sought the medium by which the Cadillac would be endowed, not with *approximate* freedom from gear shifting, or *approximate* hill-climbing ability on high, or *approximately* swift acceleration, but with the *highest possible form* of these three characteristics.

The Cadillac already possessed those qualifications in an extraordinary measure, but we wanted them developed to a point *beyond which it was not possible to go.*

This requirement pointed straight to an Eight Cylinder Cadillac with four power impulses during every revolution of the flywheel.

How fully these luxuries of travel have been achieved, nothing but your first memorable ride in the new Cadillac can reveal.

As the Cadillac softly speeds along under the almost magic influence of this new power-principle, you become oblivious to the wonderful mechanism which gives you motion. The sensation is as unique as though you had never motored before—the sense of floating through space comes to you as it never came to you before.

It is useless to try to depict in words, thrills which you have never felt—or to portray a degree of ease which you have never experienced.

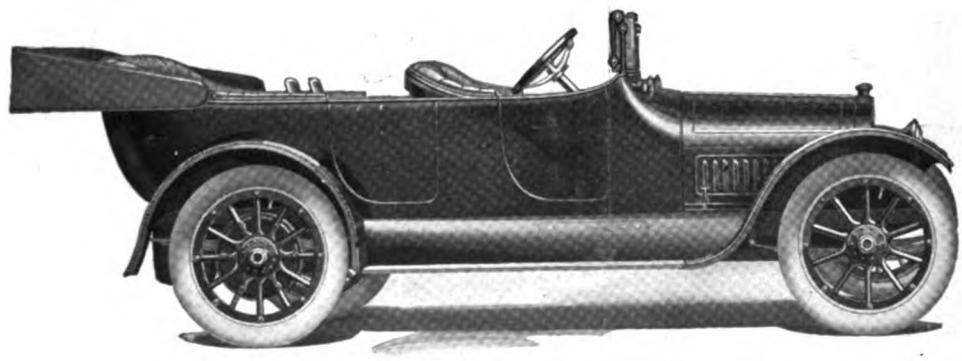
Good roads yield up a velvet quality of travel undreamed of.

Bad roads lose much of their terror, and hills seem almost to flatten out before you—so easily, so quietly, and with so little effort does the car surmount them

In operation, you enjoy the extreme of flexibility—from less than three miles an hour in crowded city streets and congested traffic to more than sixty miles an hour on the open highway, without change of gears.

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The supreme motoring experience of your life awaits you when you take your first ride in this truly remarkable car.



Seven Passenger Touring Car illustrated with Eight Cylinder V Type Engine.
Observe that the Power Plant does not demand a hood of abnormal proportions.

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Standard Seven Passenger and Five passenger cars, Four passenger Salon and Roadster, $1975. Landaulet Coupe, $2500. Five passenger Inside Drive Limousine $2800. Seven passenger Standard Limousine $3450. Berline type Limousine $3600. Prices F. O. B. Detroit.

Dealers will have demonstrating cars in the near future

Cadillac Motor Car Co. Detroit, Mich.

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MOTOR WORLD

A Trade Paper Giving the World's Motor News

Volume XL
No. 13

New York, September 23, 1914

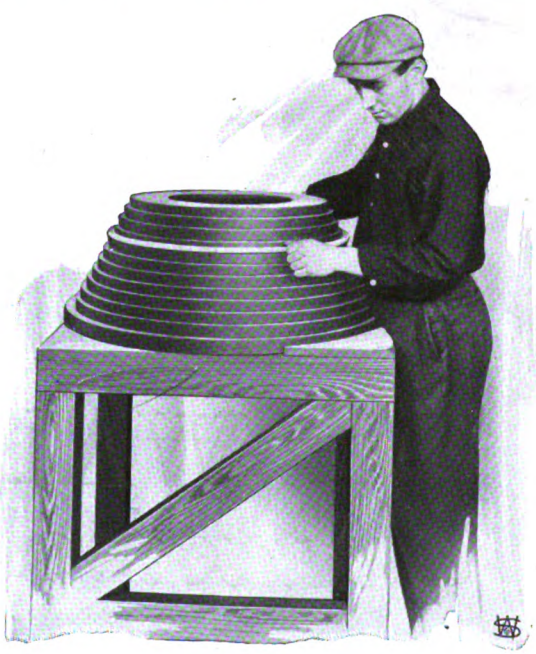
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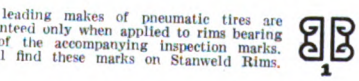
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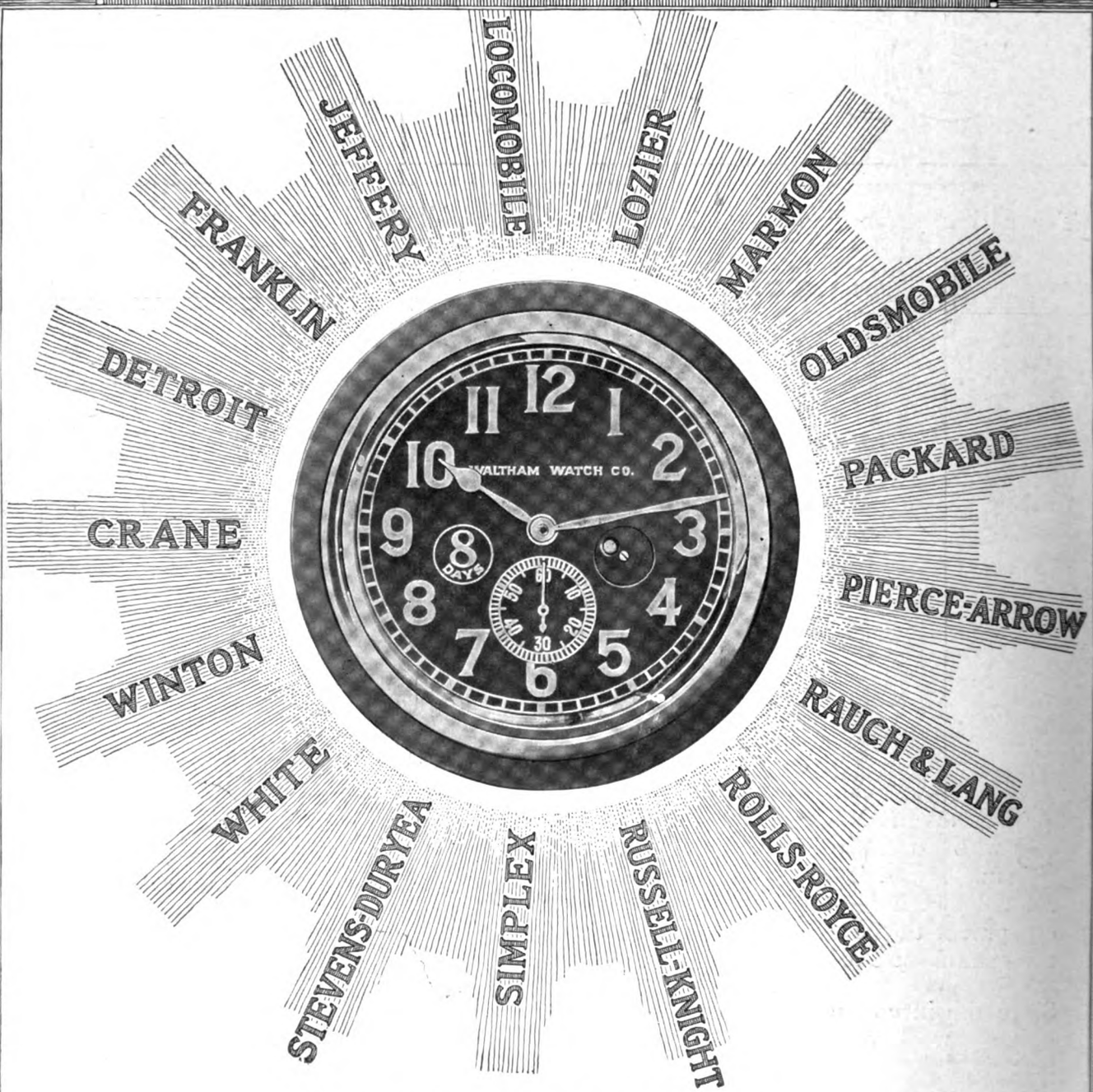
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WALTHAM
Automobile Clocks

are used as regular standard equipment on these cars. Surely this has its moral for you!

Waltham Watch Company Waltham, Mass.

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Why You Should
Sell FISK Tires

That reason is the

FISK
NON-SKID

The demand of users for this tire—the demand of people who *want to buy*—forced us greatly to increase our manufacturing facilities.

NOW we can meet the demand, what is the answer? SALES! SALES! SALES!

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This is an all-business question. Think it over! If you are a Fisk Dealer protect yourself by placing orders *now*. If not a Fisk Dealer and you want to be, write Dept. 23.

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This type of construction is entirely at the mercy of the weaving there always is in the side members of a chassis frame. Good engineers know that a radiator which is supported in saddle made of channel steel and bolted to each side frame member is the only correct method of radiator suspension.

In carrying out our policy of thoroughness we will not build radiators for any manufacturer who uses any other method of attachment.

MAYO RADIATOR CO.

NEW HAVEN, CONN.

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Overland $1075
MODEL 80
f. o. b. Toledo

Enlarged and Improved for 1915

IN spite of the fact that this latest Overland has a much more expensive, and entirely new and much larger full stream-line body, the finest electrical equipment, high-tension magneto, demountable rims, and larger tires; *in spite of the fact* that it is made throughout of all first grade materials and first grade workmanship; *in spite of the fact* that it rides—due to its longer, improved and underslung rear springs—with the smoothness and ease of the highest priced cars—*the price has not been advanced.*

Such is the perfectly natural and economical result of manufacturing so great a volume of automobiles.

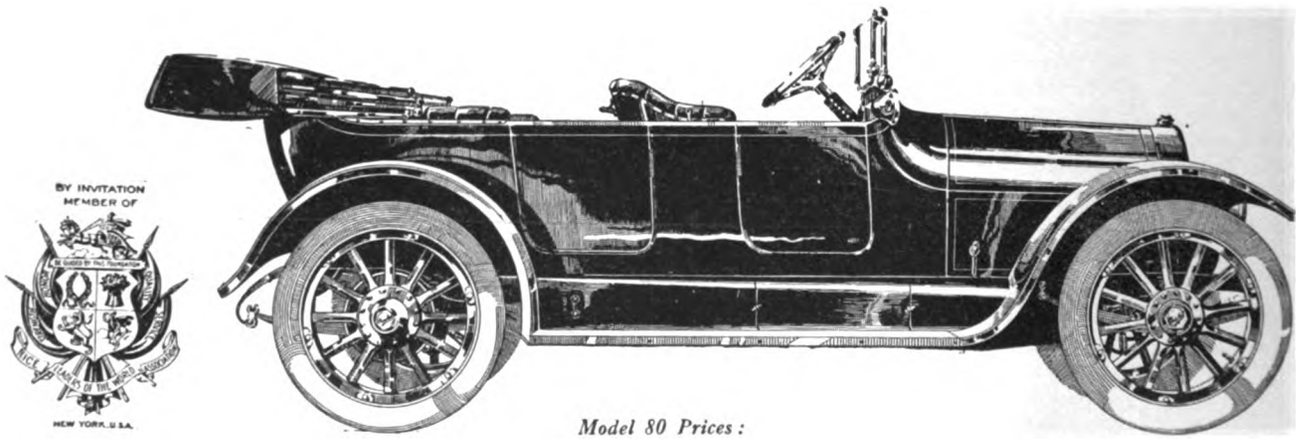
The newest Overland is, without question or doubt, the world's most extraordinary motor car value.

Here are listed a few of the 1915 Features

Motor 35 h. p.
New full stream-line body
Tonneau: longer and wider
Upholstery; deeper and softer
Individual front seats, high backs
Windshield; rain-vision, ventilating type, built-in
Instrument board in cowl dash
Crowned fenders
Electric starter—Electric lights
Electric horn
All electric switches on steering column
High-tension magneto—no dry cells necessary
Thermo-syphon cooling—no pump needed
Five-bearing crankshaft
Rear-axle; floating type
Rear springs; extra long, and underslung, 3-4 elliptic
Wheel base, 114 inches
Larger tires; 34 inch x 4 inch
Demountable rims—one extra
Left-hand drive—center control
Body:—beautiful new Brewster green finish
Mohair top and boot
High-grade magnetic speedometer
Robe rail, foot rest and curtain box

Handsome 1915 catalogue on request. Please address Dept. 50

The Willys-Overland Company, Toledo, Ohio



Model 81 Prices:
5 Passenger Touring Car - - $850
2 Passenger Roadster - - $795

Model 80 Prices:
5 Passenger Touring Car—$1075
2 Passenger Roadster—$1050
4 Passenger Coupe—$1600
All prices f. o. b. Toledo, Ohio

Model 81 Prices:
Delivery Wagon with closed body - $895
Delivery Wagon with open body - $850

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MOTOR WORLD

Vol. XL New York, U. S. A., Wednesday, September 23, 1914 No. 13

MAYOR VETOES THE SEPARATOR REPEAL

Declares Obnoxious Device Is Necessity — Garagemen to Continue Fight—Mayor Lengthy in His Reasons

"We shall continue our fight. The ordinance must now return to the General Welfare Committee, where there will be further hearings on the new evidence. The committee will then recommend to the Board of Aldermen that the ordinance be or be not repealed. A three-quarters vote is necessary to pass it over the mayor's veto, and this we shall try to do."—Secretary Charles A. Stewart, of the Automobile Dealers' Association of New York city.

The repeal of the gasolene separator ordinance in New York city has been defeated by Mayor John Purroy Mitchel. The Board of Aldermen repealed the obnoxious law July 7 and it went to Mayor Mitchell for his approval. He returned this week Monday, September 21, from his vacation, and yesterday sent the repeal back to the aldermen with his veto.

By this move the gasolene separator ordinance is still in effect. The only apparent relief of the dealers and garagemen, who have made a hard fight on the question, is to take the matter back into the Board of Aldermen and attempt to pass it over the mayor's veto. This will undoubtedly prove difficult—but will be tried.

With the veto which the mayor returned to the aldermen he sent a 10-page letter giving his reasons for his action and supplemented it with a two-page letter referring to a sewer explosion which occurred as late as Monday of this week, September 21. All sewer explosions are attributed to gasolene despite the contentions of the garagemen's expert chemist that the sewers where explosions have been most prevalent are surcharged with illuminating gas from pipe leaks and are not menacing because of gasolene or garage oils.

The mayor bases his action principally upon testimony of sewer employes and the contentions of the fire department. The garagemen maintain: 1—Gasolene does not enter sewers from garages. 2—

(Continued on page 13)

Standard Not Guilty of Monopoly

The Standard Oil Co. has not violated the "Seven Sisters" act passed in the state of New Jersey while President Wilson was governor and tending to check monopoly. The Crew-Levick Co., Jersey City, an independent, charged that the Standard was charging a low rate where there was competition and a high rate where there was none. The court, in arriving at its decision, took into consideration the competition of the Gulf Refining Co., which has been engaged in a not entirely one-sided price war with the Standard company and has taken some of the latter's customers.

Wagon Builders Bring Out Electric

After a long period of secret trials the Milburn Wagon Co., Toledo, O., one of the oldest and best known wagon and body manufacturing concerns in the country, will shortly bring out its first electric vehicle, which, it is claimed, will embody many new features in electric vehicle construction.

New King Connections In the East

The Carpenter Motor Vehicle Co., Brooklyn, N. Y., and the Stutz Motor Car Co., Newark, N. J., have been appointed King dealers in their respective territories.

GASOLENE LIKELY TO BE TAXED 2 CENTS A GALLON

Emergency Revenue Measure Again Revised and Includes Gasolene—Telephone and Telegraph Messages, Too

Gasolene may not escape a war tax after all. After having been once put into a proposed bill and taken out, it has been again included in the draft of the emergency revenue measure by the Ways and Means Committee of the House of Representatives. As the bill now stands it taxes gasolene two cents a gallon. This is to be paid monthly by the producers, but in the end the consumer will undoubtedly pay it all.

The bill will raise about $105,000,000 to make up for the loss of income from imports due to the war and other causes and contains other items which will have their effect upon members of the motor car trade.

Here are some of the other proposed taxes:

Telegraph and telephone messages over 15 cents, 1 cent each.

Express and freight receipts, 1 cent each.

Chair car and Pullman tickets, 2 cents each.

"Other" public exhibitions, probably including motor car shows, $10.

Conveyances, deeds, instruments or writings, whereby lands, tenements or other realty are sold will be taxed 50 cents where the consideration exceeds $100 and does not exceed $500, and for each additional $500 or fractional part thereof 50 cents.

The life insurance tax of 1898 of 8 cents on each $100 of the amount insured will be reenacted.

The marine, inland and fire insurance tax of the law of 1898 of one-half of one

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per cent of the the premium charge will be reenacted.

The casualty, fidelity and guaranty insurance tax of one-half of one per cent of the premium charge, as in the law of 1898, will be reenacted.

Leases, agreements, memoranda or contracts for hire, taxed in 1898, will be untaxed by the present bill.

Boston Branch For Saxon

The Saxon Motor Car Co. announces that owing to the increasing business in the New England territory it has been found advisable to establish a factory branch in Boston. The branch, which is located at 620 Commonwealth avenue, and managed by F. S. Summer, who has been identified with the motor car industry of Boston and New England for many years.

Jackson Takes Over Stratton-Woodcock

J. R. Jackson, during the last three years manager of the Stratton-Woodcock Automobile Co., Grand Rapids, Mich., is now sole owner of that concern, having bought out the interest of the other stockholders. A new salesroom is to be opened opposite the Stratton-Woodcock company. The Paige-Detroit will be handled.

Salt Lake City Studebaker Branch

The Studebaker Corp., Detroit, has opened a branch in Salt Lake City, Utah; it is in charge of R. C. Bridge, formerly connected with the plant in Detroit and more recently with the Studebaker branch in Los Angeles, Cal. Sub-agents will be appointed in all parts of the state where the business will warrant.

Bishop Briscoe St. Louis Distributer.

The Briscoe Motor Sales Co. has been organized in St. Louis, Mo., to handle the Briscoe car. Salesrooms have been opened at 3908 Washington avenue and Frank Bishop has been appointed manager. He is also manager of the American Tire Sales Co. at the same address.

Henderson Again With Cole

Negotiations are practically complete, under the terms of which C. P. Henderson will resume his position of three years ago at the head of the sales organization of the Cole Motor Car Co., Indianapolis, Ind. Homer McKee, who has been acting as director of both sales and advertising, hereafter will devote his attention solely to advertising, which he will handle for the Cole company through the Mahin Advertising Co., of Chicago, for whom he has just opened a branch office in Indianapolis.

BAY STATE GARAGE LAW GOES IN EFFECT OCT. 1

Will Mean Reconstruction of Many Garages—Fireproof Partitions and No Gas for Cleaning Among Provisions

Deputy Chief George C. Neal of the Massachusetts State Police has despatched members of his force through the Bay State in a campaign to enforce the new garage law passed by the last legislature. The general rules went into effect May 15, but the proprietors were allowed until October 1 to make the often radical structural changes that the law requires. The cooperation of the police officials in all the cities and towns has been requested and the authorities state that no matter how obnoxious the law may be to the garage trade it must be obeyed.

The law exempts garages that house four cars or less. The other garages must have a cement concrete floor, first story ceilings covered with metal lath and hard plaster, stairways and elevator wells enclosed with fire resisting materials, iron doorways, frames and automatic closing doors in partitions, and wireglass windows in exterior walls exposing dwelling houses, etc., within 20 feet. If the district police think it necessary the officers may order sprinkler systems installed.

This has meant the reconstruction of many garages, the building of new ones, and the discontinuance of a lot of old ones, at a cost to garage owners running into the thousands. Until now the State Police has not done much about the new rules, being content to wait until the law becomes fully operative. There are rules requiring noncombustible partitions and automatic fire closing doors in garages where there is a repair department, and others to prevent the handling of gasolene in repair-shops and the prohibition of anything but electric lights.

One rule that has a real measure of merit is that prohibiting smoking in garages. As this rule, as well as the others, carries a penalty of a fine of not more than $100 and one month in jail, it is expected that proprietors of garages will see that it is enforced.

There are other rules, such as using sand instead of sawdust for absorbing oil; the placing of waste material of a combustible nature in metal boxes; the maintenance of plenty of fire extinguishers; the prohibition of all sorts of wooden lockers; the extinguishing of all lights when a car is taking on gasolene, and the prohibition of the use of gasolene for cleaning purposes. Then there is the one requiring that filling of tanks with gasolene must be done by means of a hose not more than 16 feet long, with shut-off stop near the nozzle. No open receptacles will be tolerated.

Pope-Hartford Co. to Handle Parts

The Pope-Hartford Co. of Boston, which formerly handled the Pope-Hartford car in the New England territory, has closed negotiations under which it will handle the Pope-Hartford parts manufactured by the Pope-Hartford Co. of Connecticut, thus ensuring Pope-Hartford users in Maine, New Hampshire, Vermont and Eastern Massachusetts good service in obtaining parts from Boston. Parts have already been received from the new Connecticut company and they will be distributed from Boston. Sub-agents in the smaller cities of New England will carry only such parts as they order from Boston, the Pope-Hartford Co. of Boston carrying stock only at their home office.

J. C. WESTON MADE U. S. TIRE GENERAL SALES MANAGER

Joseph C. Weston has been made general sales manager of the United States Tire Co., succeeding J. D. Anderson, who has resigned. Although the title is new to Weston, who long has been connected with the United States company, latterly as Central District manager, his duties will not be strange to him, for during the past few months he has been acting general sales manager in the absence of Anderson in Europe. For the present, Anderson will remain in an advisory capacity.

Weston's promotion to the head of the sales organization is a logical one for he has a veteran's experience in the tire business, dating back to the old Morgan & Wright days. For years he was secretary of the Morgan & Wright company; when the United States Tire Co. was formed he was appointed Western District manager, his headquarters being in San Francisco. Later, he was appointed Central District manager, succeeding A. I. Philp.

Weston is exceedingly well-liked in the trade both for his universal good nature and ready smile and for his business acumen. There are few men in the tire business who are better known to the trade in general.

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GENERAL MOTORS GROSS EARNINGS $85,000,000

Net Profits Nearly $8,000,000—Figures Slightly Behind 1913—More Cars Sold But at Decreased Prices

The General Motors Co., during the fiscal year ending July 31, 1914, did a gross business of $85,373,303; the business in 1913 was $85,603,920. The net profits were $7,947,413 in 1914, which is $336,727 less than the previous year. Ten per cent more cars were sold in 1914 but the prices were less.

The balance, after payment of interest on outstanding 6 per cent notes, was $7,249,734; after paying the preferred dividend there remained $6,201,055 of undivided profits. The Board of Directors wrote off $972,419 from the book value of patents and good-will and $1,483,208 was appropriated as an additional reserve for depreciation of plants.

The outstanding funded debt of July 31, 1914, consisted of $7,852,000 6 per cent first lien notes, maturing October 1, 1915, being the balance of an issue of $15,000,000 of October 1, 1910. Aside from these there are current accounts of $3,772,123 for merchandise, etc., and $1,000,247 for payroll, taxes, interest, etc., not due.

The company has 14 active and 10 inactive subsidiaries: the 14 active are: Buick Motor Co., Cadillac Motor Car Co., Cartercar Co., Champion Ignition Co., General Motors Export Co., General Motors Truck Co., General Motors, Ltd., London, Eng., Jackson-Church-Wilcox Co., Michigan Motor Castings Co., Oakland Motor Car Co., Olds Motor Works, Northway Motor & Mfg. Co., McLaughlin Motor Car Co., Ltd., Oshawa, Ont., and Weston-Mott Co.

The company's annual statement, which has just been issued, is shown herewith. The 1914 business shows a decline as compared with 1913, but 1914 is so far ahead of 1912 that the slight decrease in 1914 can hardly be considered a backward movement.

Profit and Loss Account

Profit and loss surplus July 31, 1913	$2,945,379
Surplus for 12 months to July 31, 1914	6,201,055
Total	$9,146,434
Plants and equipment	$1,483,208
Patents, agreements, etc	972,419
Sundry adjustments	1,380
Total deductions	$2,457,007
Profit and loss surplus July 31, 1914	$6,689,428

Income Account

	Year Ending July 31 1914	1913
Net profit subsidiary co's	$7,947,413	$8,284,140
General Motors' share	7,819,968	8,184,053
Interest on notes	570,235	724,581
Surplus	7,249,734	7,459,471
Preferred dividend	1,048,679	1,048,034
Undivided profits	*$6,201,055	$6,410,937

* Equal to 37.57 per cent on $16,501,783 common stock as compared with 38.90 per cent on $16,476,783 for previous year.

CONDENSED COMPARATIVE BALANCE SHEET

	July 31, 1914	July 31, 1913
Assets		
Real estate, plants, equipment	$21,515,065	$20,458,978
Patents, agreements, etc	471,200	1,508,672
Miscellaneous investment	352,735	367,063
Cash	13,452,663	6,236,251
Notes and bills receivable	3,358,791	3,449,335
Inventories	11,642,370	18,170,907
Prepaid expenses	387,578	412,756
Good-will	7,934,198	7,934,198
Total	$59,114,600	$58,538,160
Liabilities		
Preferred stock	$14,985,200	$14,985,200
Common stock	16,501,783	16,476,783
Funded debt, 6 per cent first lien notes	7,852,000	10,935,000
Outstanding capital stock	573,000	578,000
Surplus, subsidiary companies	431,142	409,252
Accounts payable	3,772,123	4,821,774
Liabilities accrued, not due	1,000,247	1,048,970
Notes payable	.....	300,000
Reserve for preferred dividends	262,241	262,526
Reserve for special purposes	7,047,436	5,775,305
Surplus	6,689,428	2,945,379
Total	$59,114,600	$58,538,160

Los Angeles Dealers Show Oct. 17-23

It has been decided to hold the Los Angeles local show October 17 to 23 in Shrine Auditorium; a committee of eight, including Don Lee, Walter L. Brown and George Bentel, will manage the show. The Corona racemeet is scheduled to be held so that the final and big day will be on Thanksgiving day. At least $10,000 in purses, and more if possible, will be offered for contestants. While the program has not yet been completed it is said that there will be a 300-mile race for cars of the 450-inch class, which probably will be the star race.

Drouet & Page N. Y. Pullman Agent

H. W. Hayden, general manager of the Pullman Motor Car Co., York, Pa., has completed arrangements with the Drouet & Page Co., Inc., New York, to represent the Pullman in the metropolitan territory, including Northern New Jersey, Greater New York, Westchester, Putnam and Orange counties.

To Reopen Freight Rate Matter

The Interstate Commerce Commission has consented to the reopening of the 5 per cent rate advance case and has set October 19 for the beginning of the hearing. The carriers state that they can present a stronger case than was possible at the first hearing and that the necessity for higher rates will be made apparent in view of conditions resulting from the European war.

"Drive Away" Day on Coast

About 50 Studebaker dealers and subdealers from Southern California invaded the Studebaker Los Angeles establishment last week. After having been entertained by the local Studebaker manager and by B. O. Willebrands, special factory representative for the Pacific Coast, there was started the most successful drive-away yet held in this state. The following dealers went home in new cars:

E. R. Allen, Huntington Park; Warner M. Bateman, San Diego; G. G. Bundy, Santa Monica; Brand Boulevard Garage, Glendale; Beaumont Garage and Machine Works, Beaumont; Henry P. Bowers, Santa Barbara; Crown Garage and Machine Works, Corona; City Garage, Elsinore; El Monte Garage, El Monte; Eagle Rock Garage, Eagle Rock; W. B. Gates, Pomona; Glenwood Garage, Riverside; D. F. Gridley, San Pedro; Hemet Garage, Hemet; A. L. Jordan, Hollywood; Linwood Garage, Monrovia; Long Beach Auto Co., Long Beach; William F. Lutz, Santa Ana; H. M. Lennox, Van Nuys; Pasadena Motor Car Co., Pasadena; Frank L. Perry, Redondo; Perris Garage, Perris; J. A. Russell, Pico and Hill; Joseph B. Reece, Escondido; San Bernardino Motor Car Co., San Bernardino; Smith & Bryan, Covina; C. E. Strifler, Alhambra; Mr. Benedict, Needles; P. J. Weisel, Anaheim; Whittier Garage, Whittier; J. H. Williams, Compton; D. B. Wynne, Ontario.

Cooperative Supply For Grand Rapids

The Automobile Owners' Association of Grand Rapids, Mich., plans to have a garage, service station, supply and accessories department and vulcanizing station of its own. The association now has about 350 members.

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CARS AND TRUCKS MIXED AT MILWAUKEE FAIR SHOW

Many New Models Revealed for the First Time at Largest Show Ever Staged by Dealers — Track Racemeet Included

The display of motor cars at the 1914 Wisconsin State Fair at Milwaukee from September 14 to 18, inclusive, was the most pretentious exposition of this kind that the State Board of Agriculture, managing the fair, has yet been able to muster. The mammoth concrete machinery hall was filled with car exhibits, which crowded out the usual farm gas engine and power machinery displays of former years and obliged these to go into tents adjoining. As a further recognition of the motor car, the Board of Agriculture set aside one full day as "Automobile Day," presented a motor racing program and hired Barney Oldfield to perform against Lincoln Beachey in an airship on the final day of the exposition.

This was the first time that the fair board really went out to muster exhibits of cars and the result was so satisfactory that there is no doubt that with a little more work the board can present a motor show each September that will rival or excel the big Milwaukee show in the Auditorium every January. The display last week brought to Milwaukee nearly as many big factory men as the winter show and it cannot be questioned that the state fair show showed better pecuniary results than the winter show can ever hope to, by reason of the enormous number of prospective buyers, farmers and upstate city folk, who visit the fair each year.

The fair served to introduce to Milwaukee and Wisconsin people a large number of cars never seen before or never shown in public expositions prior to this time. This class included the Briscoe, Lewis VI, Haynes light six, the new R. C. H., the new Mitchell light four, the new Imperial light four, the Jeffery Chesterfield six, the new King, Oldsmobile and Westcott fours. Other makes shown included the Ford, Cartercar, Regal, Kissel Kar, Oakland, Overland, Hupmobile, Moline-Knight, Paige, Chandler, Chevrolet, Reo, Stanley Steamer, Buick, Case and Detroiter.

The truck division was a feature, and displays were offered by the Stegeman, Menominee, Crown, Jeffery, Reo, Kissel, Overland and Buick. The Jeffery Quad gave exhibitions of its powers and abilities in mud, sand, ruts and hills in a special plot of ground in the fair enclosure.

Lozier Denies It Is Insolvent

Lee E. Joslyn, Detroit, referee in bankruptcy, has been appointed custodian of the property of the Lozier Motor Co. by the U. S. District Court, pending a hearing to take place today, September 23, when it will be decided whether the company should be placed in the hands of a receiver. A petition for a receiver has been filed by three parts makers.

According to the Lozier company's attorney, the company does not admit itself insolvent. According to a statement of the company's standing in December, 1913, the total assets then amounted to $4,067,051 and the total liabilities to $1,572,667. The capital stock of the company consists of $2,500,000 in common and $500,000 preferred 7 per cent.

Records For Burman and Oldfield

Bob Burman made two world's records at the Illinois State Fair, Springfield, Ill., September 19, when he traveled 20 miles in 17:10⅗ and 25 miles in 21:17⅗. These records for a circular track were formerly held by Louis Disbrow, who made 20 miles in 17:57 at San Jose, Cal., and by Barnes, who did 25 miles in 22:07 at Portland, Ore.

Barney Oldfield established three world's records at St. Louis, Mo., September 20, when he drove his car on a one-mile circuit dirt track one mile in 44 seconds, two miles in 1:27, and five miles in 3:40⅗. The former records in the first two events were made by Oldfield and the five-mile mark was set by Disbrow about two years ago.

Metropolitan Section To Talk Tires

The Metropolitan Section of the Society of Automobile Engineers will meet Thursday evening, September 24, at the Automobile Club of America, 247 West 54th street, at 8 o'clock. L. Greenwald, of the Firestone Tire & Rubber Co., will read an illustrated paper on "Factors Affecting Tire Wear"; a supplementary paper has been prepared by H. Van R. Scheel, of the Brighton Mills. His subject is "Tire Fabrics."

Maxwell Minneapolis Office Moves

The general offices of the Maxwell Motor Car Co., of Minneapolis, have been moved to 620 South 3rd street. A service station will be opened within a short time in another section of the city.

PROMINENT MEN IN TRADE WHO ASSUME NEW DUTIES

Resignations and Promotions That Serve to Place Many Workers in New Places—Few of Them Leave the Industry.

R. E. Stevenson has become affiliated with the McFarlan Motor Co., Connersville, Ind., and will have supervision of sales in Indiana, Ohio and Michigan.

C. Louis Allen, formerly automobile sales manager of the Pyrene Mfg. Co., New York city, has been promoted to the position of general sales manager.

William L. Austin has resigned as advertising manager of the Gray Motor Co., Detroit, Mich., to accept a similar position with the Detroit Lubricator Co.

R. W. Bush has been appointed sales manager of the Velie Motor Vehicle Co., of Moline, Ill., succeeding Mr. Giltner, resigned. Previously Bush was with the Kurzman Plow Co., Peoria, Ill.

W. C. Bull, formerly a member of the sales staff of the Fisk Co. of Texas, has been placed in charge of the tire and accessory department of the Woodward Carriage Co., San Antonio. Tex.

H. M. Buckley, who entered the employ of the Ford Motor Co. in Detroit in 1909 as a machinist, has been appointed manager of the retail sales department of the Ford Chicago branch.

Chas. Merz, who has won fame and a name as a racing driver, has been appointed to the engineering department of the Findeisen & Kropf Mfg. Co., Chicago, Ill. He has decided definitely to quit racing.

A. F. Holleyhead has been appointed district sales manager of the Federal Motor Truck Co., with headquarters in Chicago. Formerly Holleyhead was manager of the Detroit branch of the Gibney Tire Co.

W. W. Bond has been appointed district sales manager for the states of Indiana and Kentucky for the Detroit Electric Sales Co., Indianapolis, Ind., which handles the Detroit electrics made by the Anderson Electric Car Co., Detroit. Bond's headquarters will be at Meridian and Walnut streets.

C. D. Stewart has been appointed sales manager of the Abbott Motor Co., Detroit, Mich. Heretofore he has managed the company's branch in Harrisburg, Pa. A. E. Landman, for the past three years connected with the traveling staff of the

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Cadillac Motor Car Co., Detroit, has become sales manager for Dan Lee, Detroit distributer for Paige cars.

S. A. Farrington has resigned his position as editor of Power Wagon to become publicity manager for the Thomas B. Jeffery Co., Kenosha, Wis. Farrington is succeeded by S. A. Phillips, formerly technical editor of the same publication.

Show Strife in St. Louis Ends

The strife between the rival motor car show associations in St. Louis, Mo., is ended. When the show committee of the St. Louis Automobile Manufacturers' and Dealers' Association allotted space for the eight annual show, to be held October 5 to 10, many of the "insurgents" barred in former years were given space.

Two years ago the Manufacturers' Association passed a rule barring dealers who exhibited in the spring show conducted by a nameless rival organization, but this year the committee voted to take the "insurgents" back into the fold and most of them accepted the chance to exhibit at the Forest Park Highlands show next month.

Forty-two dealers were allotted space to exhibit 46 different makes of cars—gasolene, electric and commercial. The Vesper-Buick Co. outbid all competitors and will exhibit its product on the stage in the theater.

Dodges Flooded With Dealer Requests

During the first nine days of this month Dodge Bros., Detroit, Mich., have received 898 separate requests for sales rights from dealers. From Ohio 654 letters have been received; from Michigan, 584; Pennsylvania, 462; New York, 442; Illinois, 348; Indiana, 324; Texas, 241; California, 231; from Canada, over 200, and 175 from other foreign countries. All told 7,652 dealers in America have applied up to date for the agency rights.

Four New Branches For Ford

Beginning October 1 there will be four new Ford branches in the United States, bringing the total number of branches up to 48. These new branches will be located in the following cities: Milwaukee, Wis., 143 8th street, A. W. L. Gilpin, manager; Newark, N. J., 1721 Halsey street, E. T. Baskett, manager; Charlotte, N. C., A. J. Langford, manager, and Brooklyn, N. Y., 1476 Bedford avenue, G. E. Hunt, manager. Besides its 48 branches the Ford Motor Co. now has 24 assembling plants and 5,600 dealers in the United States.

CONSULS BOOSTING TRADE WITH SOUTHERN AMERICA

Hold Meeting in New York and Will Explain Situation to 500 Business Men—Country Misrepresented

Consuls of Latin-American countries have united in a movement to urge American business to greater aggressiveness in the campaign to seize the trade in Central and South America which has been thrown open by the European war. The consuls met Saturday, September 19, in the Hotel McAlpin, New York city, and made preliminary plans.

Another meeting will be held Thursday, September 24; and Tuesday, September 29, the Pan-American States Association will invite about 500 prominent New York merchants, manufacturers, exporters and bankers to meet the consuls at a dinner at the McAlpin. At Saturday's meeting Manuel Gonzales, consul-general from Costa Rica, who is president of the Board of Latin-American Consul-Generals, described the situation.

"Up to the present time the commercial men of this country have not been told the truth about our countries," he said. "Notoriety seekers have given erroneous interviews. It has been preached here that South America is overrun with irresponsible and unscrupulous merchants whose rating it is impossible to learn and who may not be trusted on a credit basis. It is to be our duty now to show how utterly false these statements are, how untrue it is that these conditions prevail among us any more than they prevail anywhere else.

"We must tell promoters here that their greatest mistake in trying to do business with us—a mistake European merchantmen do not make—is in not having enough confidence in us, in not treating us as they treat each other.

"Another great error we will have to make plain to business men here is that they forget that we are just as keen to sell as they are and that in many cases we have markets actually glutted with produce for which no export markets have been found.

E. V. A. Convention Plans Progressing

The tentative program prepared for the fifth annual convention of the Electric Vehicle Association of America, to be held at the Hotel Bellevue-Stratford, Philadelphia, October 19, 20 and 21, reveals the fact that the proceedings will be of more than usual interest. Following the disposal of business matters, which will occupy the morning and afternoon sessions of the first day, a series of papers will be read. Beginning on the evening of the first day, the papers will occupy the balance of the three days. The subjects to be dealt with are as follows:

Evening Session, October 19—Electric Vehicle Charging, by J. F. Lincoln; Special Applications of Electric Trucks, by F. Nelson Carle.

Morning Session, October 20—Electric Vehicle Performance, by Robert B. Grove; Effects from the Utilization of the Kinetic Energy of an Electric Vehicle, by T. H. Schoepf; A Wider Dissemination of Electric Vehicle Information, by T. I. Jones.

Afternoon Session, October 20—Calculations of Electric Motor Characteristics and Prediction of Vehicle Performance, by A. A. Nims; Educating the Public in the Field and Use of the Electric Vehicle, by F. C. Henderschott; Power Wagon Operation in Central Station Service, by W. A. Manwaring; Electric Fire Apparatus, by Chief George S. Walker.

Morning Session, October 21—The Design and Performance of Electric Vehicle Motors, by H. S. Baldwin; Symposium—The Electric Industrial Truck, by manufacturers; the Cost of Electric Vehicle, by George H. Kelly.

Afternoon Session, October 21—European Development of the Electric Vehicle Industry, by P. D. Wagoner; Constant Potential Systems for Charging from Motor Generators, by H. P. Dodge; the Motor Truck in Traffic Congestion, by Lieut. William D. Mills.

New Sphinx Touring at $695

The Sphinx Motor Car Co., York, Pa., has brought out a touring car which sells at $695; it has a four-cylinder, 3⅜ x 5, block, L-type, detachable head motor with an S. A. E. rating of 18.25. Cooling is thermo-siphon. The equipment includes an electric generator and starter, electric lights, storage battery, electric horn, top, windshield and a spare rim. Wire wheels are $25 extra. The wheelbase is 112 inches and the tread 54½; cantilever springs are used.

New Cab Laws For Detroit

An ordinance is to be submitted to the Detroit City Council, enabling the police commissioner to decide where taxicab stands may and may not be located. Another ordinance will be submitted, regulating the rates to be charged for motor cars rented by the hour. The maximum fare is to be $3 an hour for a five-passenger car and $4 per hour for cars seating more than five. The city is opposed to private parties charging rental for stands in front of their property.

Firestone Sales Convention Coming

The annual sales convention of the Firestone Tire & Rubber Co. will be held the third week in October at the factory in Akron, O. More than 250 men will attend from all over the country.

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CARTERCAR CONCENTRATES ON SINGLE SIZE CHASSIS

Touring and Roadster Bodies Mounted, Details Refined and Improved—Tire Size Increased But Prices Unchanged

A single chassis mounting two bodies constitutes the latest line of the Cartercar Co., Pontiac, Mich., instead of the two chassis models formerly offered. The new car, Model 9, is practically a continuation of the smaller mchine of the previous series and is sold at the same price, $1,250, with either touring or roadster body and fully equipped.

The equipment consists of top with quick attachable curtains, rain-vision windshield, one extra demountable rim, electric horn, speedometer, license bracket, jack and full set of tools.

Though naturally the machine has undergone a refining process, the main features are unchanged, and this applies, it is almost unnecessary to state, to the friction drive system that the company has used for a number of years. Bodies have been brought thoroughly up to date, which means that they are of the usual streamline form, and a door has been added to the driving side at the front; this means the right side.

The gear ratio has been changed from 3.45 to 1 to 4 to 1, which gives the car better pulling ability. The tires have been increased to 33 x 4, having been 32 x 3½, and non-skids are used for the rear instead of plain treads. The change in gear ratio and in the tires has necessitated a slight change in the size of the friction drive parts.

Slight changes in the motor have resulted in an increase of power, though the general design is unchanged and the cylinder measurements, 3½ x 5, are retained. Cylinders are block cast with L-heads; the head is detachable. Ignition, starting and lighting are all taken care of by the Delco system. Cooling water is pump circulated and lubrication is by splash with circulating oil pump.

Clutch and gears are replaced by a friction system consisting of a copper alloy disk rotating with the engine, a sliding disk movable on a cross shaft and having a fiber-filled edge bearing against the copper disk, and a housed silent chain driving to the three-quarter floating rear axle.

The wheelbase is 106 inches and the tread either the usual standard or 60 inches, on order. The fuel tank is placed at the rear of the frame and feed to the carburetter is by pressure. Steering gear is of the worm and nut type. Brakes are of the usual internal and external types and the rear springs are three-quarter elliptics.

Chandler Closed Car Deliveries

The Chandler Motor Car Co., Cleveland, O., has started to deliver to its dealers the new closed cars which the company is bringing out this year for the first time. The new bodies are a cabriolet, listed at $1,950; a coupe, $2,200; a sedan and a limousine, both costing $2,750. All these bodies are interchangeable on the standard Chandler six-cylinder chassis and weigh only from 100 to 175 pounds more than the light six touring car. With the exception of the cabriolet, the bodies are upholstered in gray cloth and Bedford lace and trimming, while the cabriolet is trimmed in hand-buffed upholstered leather. The coupe and cabriolet seat three passengers. The sedan is a five-passenger model of the owner-driver type and the limousine seits seven passengers, all facing forward. The cabriolet has a very wide seat, accommodating the driver, with a 26-inch-long seat for two passengers, all facing forward.

Paterson Six Listing at $1,485

The W. A. Paterson Co., Flint, Mich., announces that the price of its 1915 six-cylinder car is $1,485, completely equipped. The motor is a Northway, cast en block, with 3½-inch bore, 5-inch stroke, having L-head cylinders. The carburetter is a Stromberg, and the Delco starter, lighting and ignition system is used. The wheelbase is 124 inches and the wood wheels are fitted with 34 x 4-inch tires, both on the front and rear. The car will be equipped with left drive and center control. The axles are Weston-Mott, floating. The equipment will be standard and includes a motor-driven air pump. Since the announcement of its new four-cylinder model the Paterson company has decided that it will build these cars with a floating rear axle instead of semi-floating and that a Stromberg carburetter will be used.

Denby Adds One-Ton Truck

The Denby Motor Truck Co., Detroit, Mich., will build a one-ton truck in addition to the one-and-a-half-ton vehicle announced some time ago. The only difference between the two trucks will be that the one-ton truck will have heavier springs and larger tires. It will cost $1,600, or $100 more than the one-and-a-half-ton truck.

LATEST WAVERLEY MODEL SHOWS NEW BODY DESIGN

Four-Chair Brougham Has Low Sills, Aluminum Roof and Panels—Sashless Windows Have Been Made Larger

A new brougham of the four-chair type has been brought out by the Waverley Co., Indianapolis, Ind., to take the place of the older machine of the same type; the new model is designated as Model 109 and the price is $3,150. The other cars in the line are Model 104, a four-passenger front drive car at $2,900; Model 105, a four-passenger rear drive at $2,800, and Model 108, a five-passenger limousine, with forward drive, at $3,500.

In the new model the rear corners are rounded instead of being sharp, as in the past; the battery boxes, still mounted under the front and rear decks, are lower and smaller and more gracefully curved; windows are larger and are of the sashless type; new oval corner windows have been introduced, and decorative window shades have been added.

A new departure for the Waverley company is the use of aluminum for the roof and panels. The curved sill on the new machine gives a low body suspension without, however, cutting down the road clearance; the body of the car is 7 inches nearer the ground than in the corresponding car of the preceding series, though the road clearance is the same.

The medium speed, four-pole, series wound motor is retained, and also the Waverley drive through silent chain to a countershaft parallel with the axle and herringbone gears to the differential. There is no change in the Waverley spring suspension.

Current is supplied by a lead battery of 42 cells and either 11 or 13 plates, the make being optional. For a slight advance in price the Edison or the Ironclad batteries will be installed. The makers state that the car will make about 75 miles per charge.

The controller is of the knife-blade type, giving continuous torque, and is so arranged that it is impossible to start the car on any but the lowest speed.

The extreme length of the car is 149 inches, the width 66 inches, and the wheelbase 106 inches. Tires are 34 x 4 front and 34 x 4½ rear and may be either cushion or pneumatic at the same price. Upholstering and painting are optional.

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MOTOR WORLD

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National Used Car Guide

The used-car market report issued some weeks ago by the Chicago Automobile Trade Association for the benefit of its members is already bearing fruit. One dealer, who heretofore had believed that he was entirely familiar with the values of all used cars, has admitted that he was overestimating used cars of a certain make and has been revising his allowances for these cars in accordance with the values set in the market report. What this particular dealer has already done, scores of others may have done also and hundreds if not thousands will do in the future.

Too liberal allowances have been made by many dealers on used cars, due to their ignorance of the exact value of these cars. Take the dealer who does not sell more than 200 cars a year. He may be approached by prospects with a total of nearly 200 different makes of used cars. With this number of used cars the dealer has small chance of becoming entirely familiar with the value of all of the different used cars.

Chicago's Report Valuable

To such a dealer the Central Used-Car Market Report is a guide. He can use it as readily as he uses a dictionary. The market report is pocket size; in less than one minute he knows the actual figure at which a used car of certain make and model has sold during the three previous months. These values are not imaginary, but real values. In some cases the used-car values in these market reports represent not the value of a single used car of a certain make and model, but rather the average value of three or four cars that have been sold during the period covered by the market report.

These used-car market reports are now being taken up by dealers in many cities distant from Chicago, where dealers are willing to pay for knowing what used cars sell for in Chicago. These Chicago values may help the Boston dealer; to the dealer in Kansas City they are of value; and the dealer in Seattle can get his money's worth out of them.

Why should not the dealer work for a used-car market report covering the entire country? He should. He needs it. With such a market report issued every three months he would be entirely protected on used-car values. Such a report could give him the used-car values in different territorial sections, such as New England, the Pacific Coast, Greater New York, Chicago and the Central States, etc.

As in Other Trades

A purchaser of pig iron does not buy from day to day or week to week without consulting the market reports on pig iron. The same is true of the stock buyer purchasing horses and cattle. Practically all old established industries have some form or other of market report. These reports serve as a means of standardizing values. This is exactly what is needed by the motor car dealer. The big dealer, in large population centers, with much experience can safely calculate the value of various makes and models of used cars, but not so with the small dealer, who is called upon to decide perhaps not more than once a year on the value of a certain car. These are the dealers who have been losing heavily on used cars in the past, and they are the ones who can benefit very largely from some form of central market report, giving actual sales prices for different models of used cars.

Are You a Price-Cutter?

Is it ever permissible to cut a price?

Are bargain methods ever legitimate or profitable in accessory and supply stores?

The letter from J. K. Marston which appeared in Motor World September 2 presented a well thought out plan of winning trade by inducing buyers to come in to get a "bargain"—something "cut" for a week.

Feasible as the plan might seem, it does not seem popular with the trade in general, as is indicated by the opinions which have since been given by some of the best accessory and supply men in some of the largest cities. A few claim there is merit in the plan; the others condemn it.

But is this because there is no merit in the plan or because the mere mention of "cut price" is like waving a red flag at a bull? It seems evident that some never would adopt the plan because they maintain a fixed opinion regarding price-cutting and steer shy of it as a matter of principle.

Motor World would like to hear from everyone on this question. What do you think? The situation applies essentially to the supply store but no man's opinion is barred.

Let's have it!

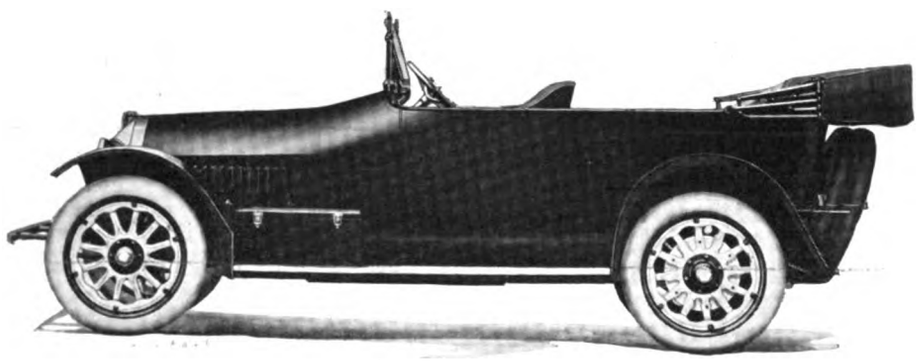
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PATHFINDER PRESENTS A NEW 7-PASSENGER MODEL

Mounted on Standard Daniel Boone Chassis and Sells at $2,322—Body Long, Low Hung and Up-to-Date

One more model has been added to the Pathfinder line, the 7-B. This is a seven-passenger car of distinctive design selling at $2,322. It is mounted on the standard Daniel Boone chassis, which was fully described in Motor World, June 17. The extra tonneau seats on this car fold forward into the backs of the front seats, out of sight and out of the way.

The Motor Car Mfg. Co., maker of the Pathfinder line, makes two chassis upon which are fitted a full line of roadsters and touring models. Both chassis have six-cylinder motors, the smaller with the little six Continental 3¾ x 5¼ motor and the larger with the Continental 4⅛ x 5¼ power plant.



The new Pathfinder body is long and low-hung—The battery box is on the runningboard in front

The new body is long and low hung. The cowl molds into the straightline body without a break and the upholstery is all flush with the top of the body. The battery box is carried on the runningboard ahead of the front door, and the spare tires are carried on the rear. Westinghouse lighting, starting and ignition and full equipment, including all the usual items are included at the quoted price.

Seven More Whites For P. O.

The Post Office Department has awarded contracts for seven trucks to the White Co., Cleveland, O. The capacities are as follows: Five 1,500-pound trucks at $2,050; one 3-ton truck, $3,445, and one 3,000-pound truck at $2,825.

These seven, together with the 20 purchased from the White company a year ago, make a total of 27 of these vehicles at present owned by the department. The 20 purchased a year ago are in use in post offices in five or six different cities.

Cotton as Cash for Buying Cars

Confident that business conditions in the country are improving steadily and that the future demand for cotton will be exceptionally heavy and that consequently there will be big sales, the Forsythe Motor Co., Atlanta, Ga., distributer of the Stearns-Knight cars, will accept cotton in payment for automobiles. The company has been running the following unique advertisement in a local paper:

COTTON

Forsythe Motor Co., distributers of Stearns-Knight cars, will accept properly certified warehouse receipts for cotton, upon a basis of not less than 10 cents a pound, middling cotton, in settlement for automobiles.

This cotton will be held until February 1, 1915, and if at that time it can be sold for more than 10 cents a pound the original owner will receive the increase, less the cost for holding.

If the cotton does not sell for as much as 10 cents a pound we will bear the loss.

We offer the following cars for immediate delivery: Five-passenger National, seven-passenger Fiat limousine, five-passenger Stearns-knight, four-passenger Stearns-Knight, Pope-Toledo raceabout, Babcock electric, seven-passenger Cole.

Lincoln Highway Official Guide

The Lincoln Highway Association has issued from its national headquarters an official tourist guide, which not only shows the exact route of the Lincoln Highway but the improved main connecting roads from every section as well. The map is printed on a heavy map cloth and folds into small space so that it can be easily slipped into the inside pocket of a coat.

GOODYEAR MAN LAUNCHES BIRMINGHAM ASSOCIATION

Brings Car and Accessory Men Together and Cooperation and Fair Competition Are Agreed Upon

A smoker at the Hillman Hotel, Birmingham, Ala., given by special representative R. H. Daniels, of the Goodyear Tire & Rubber Co., Akron, O., was attended by nearly 80 per cent of the local motor car and accessory dealers, and as a result the Birmingham Automobile Association was launched. It was agreed that henceforth there shall be no price cutting in the accessories business, but cooperation between the dealers and no unfair competition. The special representative, as well as the Southern district manager and other speakers, told the dealers what had been accomplished in other cities and what could reasonably be expected in Birmingham.

Among those present were the following representatives of the Goodyear Tire & Rubber Co.:

J. E. Taylor, local manager; F. H. Kafford, Jr., city salesman; P. J. Massey, rural salesman; E. K. Bolen, adjuster; W. G. Harris, southern district manager, of Atlanta; H. G. Palmer and R. H. Daniels, special representatives of Akron, O.

Among the other automobile men present were:

Thomas E. Morris and Henry Westhall, of the Morris-Westhall Tire & Auto Co.; A. D. Abbott and Charles Nolen, of the Nolen Tire & Rubber Co.; W. S. Edwards, Brownell Auto Co.; J. Y. Rartyn, Chase Motor Truck Co.; Bradley J. Saunders, R. C. Bolton and J. C. Wheeler, Saunders Motor Car Co.; A. W. Farrish and E. W. McPherson, Birmingham Motor Co.; H. Blacklock, Blacklock Tire & Rubber Co.; James McPherson and M. P. Klyce, Drennen Overland Co.; P. J. Thornton and J. P. Brophy, Thornton Tire Co.; W. W. Robertson and J. O. Rowlett, Robertson Tire & Auto Co.; W. C. Schoppert, Drennen Motor Car Co.; H. J. Gwinner, Turner Electric Supply Co.; H. B. Hodges, J. R. McWhinney and E. L. Scouton, of the Highland Garage.

Ed S. Archibald and J. Hall Christian, Wimberly & Thomas Hardware Co.; Charles Denegre, Southern Garage; and G. D. Britton, Alabama Tire & Repair Co.

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MAYOR VETOES REPEAL OF GASOLENE SEPARATOR LAW

(Continued from page 5)

Any existing separator will not separate gasolene from sewage even if there were any to separate. 3—The separators are costly, their installation ranging from $500 to more than $1,000. The mayor's letter of Monday, September 21, in part follows:

THE MAYOR'S LETTER

Taking up the first point, that the oil separators are unnecessary, I am of the opinion that the two departments mentioned above have made out an exceedingly strong case in favor of the retention of the separators, having had time to lay before me evidence that was not available when your Honorable Board had this matter under consideration.

You will, of course, have read in Section 376 that the installation of oil separators is not mandatory in all cases, but that a certain discretion is vested in the Fire Commissioner, where, in his judgment, separators would not be necessary. This is not, therefore, a case where a hard and drastic rule is to be repealed, but one where the discretion of one of the heads of the government is to be entirely taken away and garages relieved from the expense of installing separators.

Dr. Moore, the consulting chemist of the Fire Department, made an investigation of 48 garages in this city that had oil separators installed, and found that in 13 days 70¼ barrels of waste oils were collected, about 40 per cent being pure gasolene. I find further that the more thrifty garage owners have made agreements with a waste product company and sell the accumulation of oil in these separators for 50 cents a barrel. From the records of this waste product company we find that 50 garages in 70 days (from April 28 to July 20, 1914), had 265 barrels of oil taken from their separators, and that 106 barrels of 50 gallons each of this amount was pure gasolene.

In answer to a letter from the Fire Department this waste product company on July 22, 1914, stated that in the three months previous they had collected from oil separators in this city about 3,000 gallons of waste product, of which 40 per cent was pure gasolene.

. . . I find the results of certain experiments carried on by Professor A. L. Dean, of Yale University. It is there stated that one gallon of gasolene oil would produce perfect explosive conditions in a 42 inch sewer 250 feet long.

In summing up the conclusion to be drawn from the data produced by the examination of Dr. Moore and the reports from the Waste Products company, we must remember that although there are 2,500 or more garages in the City of New York, only about 300 of them have installed oil separators. The amount of gasolene, therefore, that has been going into the sewers must have been an exceedingly dangerous quantity, as appears from the accidents which have occurred at First avenue and 42nd street.

In my own personal experience I have frequently received expense items of gasolene used in washing my automobile, and I hear from friends, from whom I have made inquiry, that they have had this same experience.

As to the second objection to the oil separator ordinance, that it is a great expense on the garage owners, Mr. Terry having claimed at the public hearing that they cost each garage from $600 to $1,000, I have had certain figures laid before me which I will take the liberty of presenting to you. I find that there are four oil separators now in the market—the Wieben, the Eureka, the Hydraulic and the Ansonia. From three of these companies cost figures have been obtained for oil separators as follows: (The mayor here cites installation costs of from about $200 to $300.)

From these figures you will see that compliance with the present ordinance is not such an excessive burden.

I will now lay before you the facts as shown by the affidavits of the city employes in the Bureau of Sewers in Manhattan. (The mayor here gives affidavits of various sewer employes who testify that gasolene in large quantities exists in the sewers and that it has frequently overcome workmen and endangered their lives, as well as having caused dangerous explosions.)

I have also a report before me by Assistant Inspector of Combustibles Lieberman, which states that he examined the United States Postal Garage at 42nd street and First avenue, and found that no oil separator had been installed there. He found that all drainage from this garage emptied into the house drain and this in turn into a pipe line, which ran diagonally across First avenue and into a manhole at the northeast side of 42nd street and First avenue and thence into the main sewer line.

I might add that the above affidavits further state that these men, who have had this long experience in cleaning sewers, were familiar with the odor of ordinary gas in the sewers, and that on the occasions mentioned by them in their affidavits the trouble was caused by the fumes of gasolene, which they could readily distinguish from ordinary gas.

In order that there might be no question that the gasolene came from the United States Mail garage to the sewer, samples of the mixed oils were taken from the sluice basin in the street into which the pipes from this garage led. An analysis of these carefully secured samples showed gasolene 27 per cent, kerosene 10 per cent, lubricating oil 58 per cent. miscellaneous oils 5 per cent.

I have laid all these new facts in full detail before you, knowing full well that when you realize the great danger under which our sewer cleaners work because of gasolene fumes from adjacent garages, you will not hesitate to insist on the maintenance of all safeguards that may be installed at such reasonable expense.

Respectfully,
JOHN PURROY MITCHEL, Mayor.

Mayor's letter of September 22 to Board of Aldermen:

After preparing my memorandum to you disapproving the ordinance that would dispense with oil separators in garages, I have learned of the third explosion in the 42nd street and First avenue district.

I have the Bureau of Sewers report now before me, which shows that sewer cleaner Hayes was at 42nd street and First avenue yesterday afternoon taking samples from the sewer opposite the United States Mail garage. He states that about 4:40 P. M. some flames were noticed issuing from the second manhole east of First avenue in 42nd street. He further states that shortly after 5 o'clock a terrific explosion took place throughout the sewer in 42nd street as far west as Lexington avenue.

The Fire Commissioner has also reported to me on this explosion, and states that his chief inspector of combustibles arrived at the scene of the accident about 5:20 P. M., and says that at several manholes the chief inspector detected a strong smell of gasolene. Acting Chief Cox of the Eighth Battalion and Captain McLaughlin of Engine 21, the first officers of the Fire Department to arrive on the scene, also report that when they reached this locality there was a most pronounced odor of gasolene in the air. These three officers give their personal opinion that there is no question but that this explosion occurred from gasolene in the sewers.

This last accident leads to the conclusion that we must guard more carefully our city sewers from gasolene vapor, and that a rigid inspection of garages and other places using gasolene must be carried out.

Respectfully,
JOHN PURROY MITCHEL, Mayor.

DEALERS' PROBLEMS TO BE DISCUSSED AT CONVENTION

Program of Four-Day Truck Meeting in Detroit Nearly Ready — Seventy Manufacturers and 300 Delegates Coming

Although the final draft of the program for the Motor Truck Convention which is to be held in Detroit October 7, 8, 9 and 10, has not yet been perfected, a sufficient number of members of the Motor Truck Club of America, which is sponsoring the gathering, have signified their intention of preparing papers to indicate that the meetings will be of special interest to dealers. Of the papers that now are in course of preparation, more than a dozen have to do directly with dealers' problems. The tentative program that has been laid down is as follows:

Wednesday Afternoon, Oct. 7

"Time Payment Plans for Trucks," Walter B. Parker, Commerce Co., Detroit, Mich.

"Territorial Lines for Dealers," T. R. Lippard, Stewart Motor Corp., Buffalo, N. Y.

"Evils of Overloading and Overrating for Trucks and Permissible Body Rates," H. W. Alden, Timken-Detroit Axle Co., Detroit, Mich.; John Utz, Perfection Spring Co., Cleveland, O.

Thursday Morning, Oct. 8

"Lists, Discount for Quantity Business, Discounts for Parts, etc.," M. L. Pulcher, Federal Motor Car Co., Detroit, Mich.

"Traffic Engineering," R. W. Hutchinson, Sternberg Mfg. Co., Milwaukee, Wis.; E. L. Shoemaker, Denby Motor Truck Co., Detroit, Mich.

"Export Selling Methods and Requirements for Motor Trucks," J. B. Crockett, New York City.

Thursday Afternoon, Oct. 8

"Sales Assistance to Dealers," C. W. Moodie, Standard Motor Truck Co., Cleveland, O.

"Standard Tire Sizes," J. E. Hale, Goodyear Tire & Rubber Co., Akron, O.

"Cost and Evils of Overloading and Overspeeding in the Truck Tire Field," S. V. Norton, B. F. Goodrich Co., Cleveland, O.

Friday, Oct. 9—Dealers' Day

"Manufacturers Guarantee of Service to Owners," W. L. Day, General Motors Truck Co., Pontiac, Mich., will champion this from the makers' viewpoint, and J. H. Thompson, Thompson Auto Co., Detroit, Mich., from the dealers' viewpoint.

"Central Market Reports," H. M. Allison, Chicago Auto. Traders Exch., Chicago, Ill.

"The Trading Evil," W. H. Chilcott, General Motors Truck Co., Pontiac, Mich.

"Demonstrations, Necessity and Charges," J. A. Ayers, General Motors Truck Co., Detroit, Mich.

"The Driver's Relation to Successful Motor Truck Operation," C. P. Cary, Federal Motor Truck Co., Detroit, Mich.

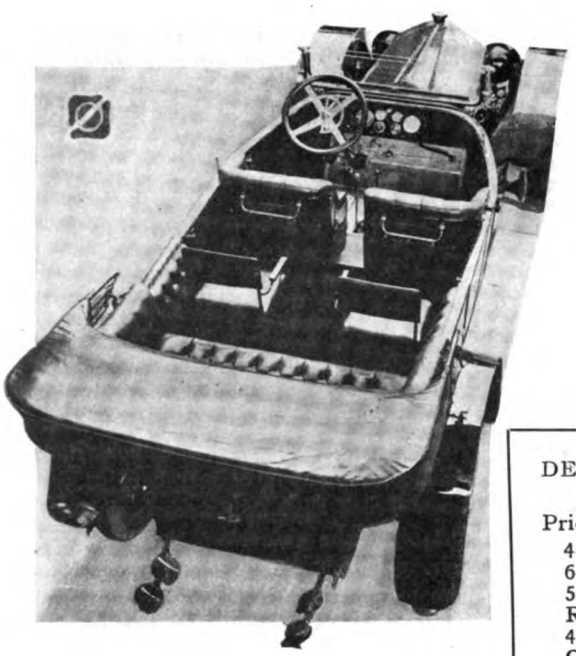
"How to Colculate Costs," R. W. Hutchinson, Sternberg Mfg. Co., Milwaukee, Wis.

Up to date more than 70 different manufacturers have stated that they will be present at the convention and it is expected that upwards of 300 or more delegates will be on hand.

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National Builds Single Six

Evolves Clever Boat Body With Nautical Lines; Four Swivel Chairs on Tracks—Other Types, With Improvements, Continued at Old Prices—Fours to be Built Only on Order



The 6-passenger toy tonneau has extra seats folding into backs of front seats, which are separated by a passage

A single chassis model, which is a refined continuation of the six of last season, will carry the six bodies of the new series built by the National Motor Vehicle Co., Indianapolis, Ind. Of the bodies, five are, like the chassis, carried over with improvements in various details, while the sixth is an entirely new design—a boat body for four passengers.

The new body has four deeply upholstered individual seats and an extra seat that folds into the rear end of the body. The designation of the body is due to its resemblance to the upper part of a torpedo stern motor boat. The chairs are placed side by side, two in front and two in the rear, and are mounted on tracks so that they can be moved backward and forward and also are swiveled. The price of the new model is $2,700 with the full equipment that is standard with all the Nationals—top with Collins curtains, windshield, horn, an extra demountable rim, tire pump, jack, tools, etc.

The other models are practically the same as in the past mechanically, though important detail improvements have been made, and the prices have undergone no changes. Two toy tonneau models, for four and six passengers, cost $2,375 and $2,500 respectively; five-passenger touring car and roadster $2,375, and coupe $2,850. While the four-cylinder motors are still coming through the factory they will be made only on special order when the present lot has been shipped.

In body work, stream lines have been adhered to throughout the line, though the boat body goes further in this respect than the others, having a pronounced sweep at the sides where the others are straight. Color is optional, but in the absence of specifications blue-black will be supplied. All models have 132 inches wheelbase, except the roadster, which has 124.

DETAILS OF NATIONAL LATEST SERIES SIX

Price:	
4-passenger toy tonneau	$2,375
6-passenger toy tonneau	2,500
5-passenger touring	2,375
Roadster	2,375
4-passenger boat body	2,700
Coupe	2,850
Color	Optional
Number of cylinders	Six
Shape	L-head
How cast	Block
Bore	3¾
Stroke	5½
S. A. E. rating	33.6
Magneto	Eisemann
Carburetter	Rayfield
Starting-lighting	Remy
Clutch	Cone
Gearset	3-speed
Wheelbase, roadster	124
Wheelbase, other models	132
Tires	36 x 4½
Wheels	Wood
Steering	Left
Control	Center
Type rear axle	Full floating

Extras: Wire wheels, $125.

Equipment: Top with Collins curtains, windshield, horn, extra demountable rim, tire pump, jack, tools, etc.

The entire electrical equipment has been altered, Remy starting and lighting replacing the outfit used formerly, and in place of the dual system of ignition the Eisemann magneto now forms the sole source of ignition current.

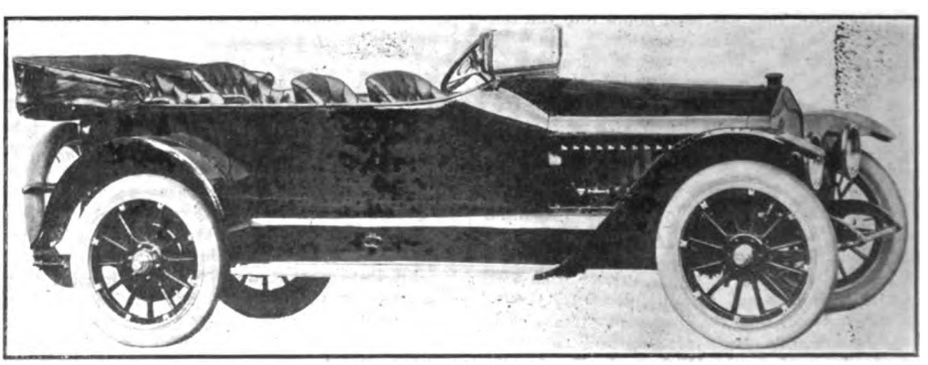
Twenty-five per cent has been cut off the weight of the reciprocating parts of the motor, increasing power and eliminating vibration at high speeds. The crankcase is a heavier casting, adding rigidity. The oiling system remains the same in principle, but a vertical oil screen replaces the horizontal type, eliminating any chance of clogging because the oil cannot settle on the surface.

In the gearbox the travel of the sliding pinion has been increased by ¼ inch, making possible an easier gear shift. The bearings of the rear wheels are larger and the cantilever springs are now of silico-manganese instead of carbon steel, and flat instead of arched.

About 100 pounds reduction has been made in the body weight, although the six-passenger body really is longer and wider than in 1914. The extra seats fold into the backs of the front seats and are concealed by a leather flap that buckles over them. The Willard battery now is long and narrow and is neatly stowed beneath the splash guard.

The 3¾ x 5½ power plant is a six-cylinder block design with L-head cylinders.

The intake and exhaust manifolds are cast separately. The exhaust manifold is of gray iron and the intake of aluminum and cored so that the water jacket space registers with that of the manifold,



The wheelbase of the 6-passenger car is 132 inches and the tires 36 x 4½. The price is $2,500 with full equipment. All models have Remy electric lighting and starting

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allowing the water to circulate about the intake gases to assist vaporization.

The waterjackets have baffle plates, so that the water is led from a point beneath the valves where it enters and makes a circuit of each cylinder before reaching the outlet at the top. The jackets are fitted with a removable cover plate.

The camshaft, carried on four bearings, is completely enclosed and virtually runs in a bath of oil. The cams and shaft are in one piece.

The entire valve mechanism is enclosed, the adjustment points being accessible by the removal of three cover plates, each plate covering two inlet and two exhaust valves. The ends of the valve stems are hardened and the push rods are of alloy steel. The stems and push rods work in separate removable bushings.

The oiling system is the same as that employed in 1914. Oil is carried in a reservoir in the lower half of the crankcase and is pumped through a lead and separate tubes to each of the main bearings. From the main bearings the oil flows down into a series of splash troughs. The excess from the troughs is led back to the crankcase through overflow holes. The filler tube is brought high at the front end, rendering it accessible and there is a float gauge on the same side.

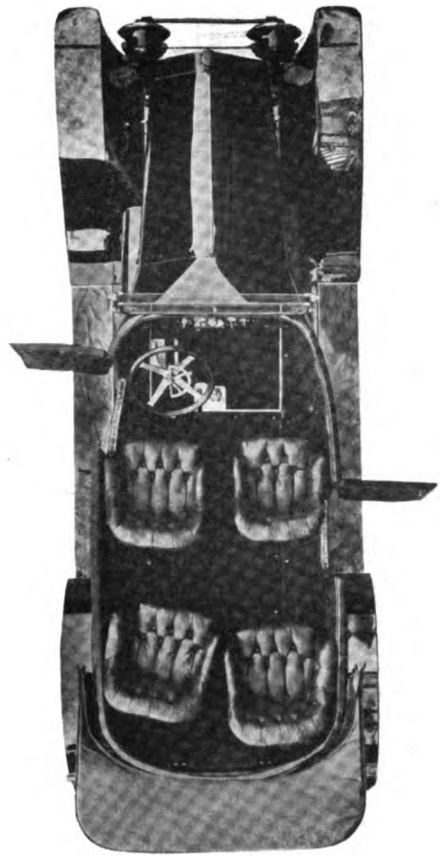
The cooling system includes a centrifugal water pump on the left side of the motor at the forward end and a 16-inch steel fan on ball bearings.

The electrical equipment is a 6-volt double wired three-unit system. Ignition is by an Eisemann magneto. The starting and lighting units, while in reality separate, are combined in one housing, the system being the Remy double-deck type.

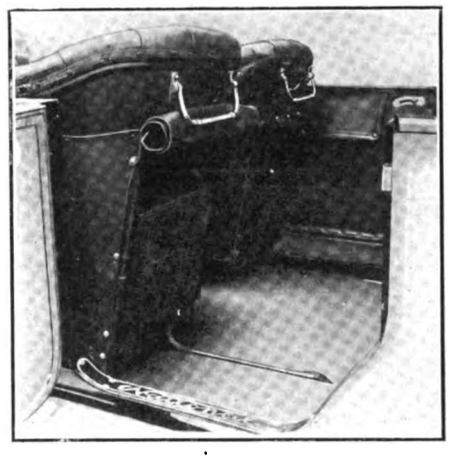
As the starting motor is capable of turning over the engine at 100 r. p. m. even under adverse conditions, the National company has decided to depend solely upon the magneto for ignition. The reduction between the starting motor and the crankshaft is 28 to 1. The reduction is 2 to 1 between the generator and the crankshaft.

The generator commences charging the battery at a speed of 8 miles per hour and carries the full lamp load at about 12 miles per hour, when the output is about 12 amperes. The current regulation is effected by a bucking coil and the drive is by silent chain from the crankshaft.

The gasolene system remains unchanged except that the newest Rayfield carburetter is fitted—Model G-3, 1¼ inch. The fuel tank is between the rear frame members and holds 21 gallons. Feed is by pressure, the pump being on the side of the motor and driven off the rear end of the camshaft. The gasolene tank is fitted with a gauge and the filler neck is extended back to provide for easy filling.



Sociability is encouraged by the boat body, in which the seats move back and forth on tracks, and also swivel



When the extra seats are folded they go into recesses in the front seats and are covered by leather flaps

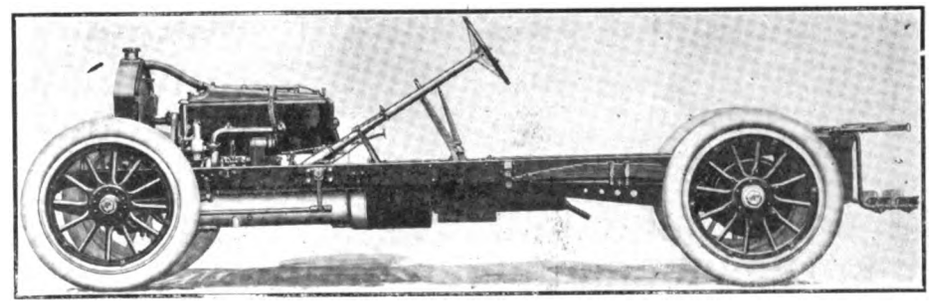
The clutch is a cone, the type used in the National since its inception. Beneath the surface of the leather are flat springs, which are compressed when in engagement. The three-speed gearset is of the design heretofore used in National cars, the only difference being the increased travel of the shifter pinion. This has necessitated increasing the length of the shaft in the gearbox ¼ inch and consequently has brought the bearings further apart; the total increase in the overall length of the box is only ¼ inch. On the bottom of the shifter lever there is a bell-shaped guard that covers the opening which would ordinarily be left by the gate, the object being to help keep the heat and dust out. The gearshift lever is over the gears, thus cutting to a minimum the linkage required.

The drive shaft is not enclosed by a torque tube, but the universal joints are covered with leather and a pressed steel torque arm is fitted. The axle has roller bearings. The brakes are the usual double expanding and contracting.

On the stock cars the wheels are wood, although wire wheel equipment will be fitted at an additional cost of $125. The tires are 36 x 4½. The drive is taken through the main leaf of the rear spring, which is heavily constructed. Easy riding is obtained by the use of a comparatively large number of thin leaves; there are eight leaves in the cantilever.

The front axle and frame construction are standard throughout and do not depart from previous designs. Between the front ends of the side members a distance bar is fitted and the side members are heavily bracketed. The radiator is carried on a trunnion mounting.

Control is unchanged except that the instrument board has been rearranged. The speedometer instead of being at the side is in the center. The steering wheel is at the left and the levers in the center.



A single 6-cylinder chassis carries all the regular body types. The cantilever springs have heavy main leaves to enable them to transmit the drive

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Big Village Boosters Forget Business Cares



New York Dealers Speed 50 Miles From Broadway and Play - Clam-bake Adds Finishing Touch To Day

IT has been said that all work and no play makes Jack a dull boy; it is because of this truism that that portion of the New York motor car trade which goes to make up the highly elite organization known as the Big Village Motor Boosters gets out once a year into the sunshine and devotes itself exclusively to play.

The Big Village Motor Boosters have been holding their annual outings at Fred Wagner's Long Island farm for four years now and the fourth function, which was held Thursday last, September 17, proved as great a success as did any one of the other three and perhaps a little more so.

Dealers Turned Out in Force

All told, more than 200 dealers and their guests assembled at the veteran starter's homestead and played. They rough-and-tumbled each other and tried to outdo each other in about a dozen different kinds of contests, athletic, automobile and otherwise, and altogether they had a thoroughly good time and forgot business completely. It was long after nightfall when the last of the 43 cars that rolled into Wagner's 5-acre lot rolled out again and commenced the 50-mile journey which led to Broadway and work.

Because the Wagner farm lies a good 50 miles from Broadway and Automobile Row, those who left their business cares behind them had a really royal time. The field where the various events were held was back from the road; there were no neighbors; there was no excuse for anyone to feel even a little bit of restraint, and there was no real reason for anyone to feel the weight of dignity. In a word, the gathering was a private one—and, above all, it was a successful one.



When Dan Swander grabbed the big stick not many got past him; Catcher Fred Miller's pose is characteristic



The appetizing odor that floated over the field from the clam-bake was tempting enough to draw two motorcycle "cops" from their favorite haunts by the roadside

And because the outing was such a successful one and everyone who attended returned in such a contented frame of mind, a number of lessons valuable to others who may contemplate stage-managing other events of the kind may be drawn from the gathering.

First, it is necessary for those who run such events to remember that while the selling of motor cars and accessories may be more or less hard work, the strife that centers about athletic contests is infinitely harder work, albeit work of another kind. It is the kind of work that makes red blood course through one's veins and it creates an appetite that may be quite astonishing. Hence, what food there is—and at the Booster's outing it was truly excellent and there was plenty of it—should be served with all the speed possible.

Whole Affair Well Managed

There should be plenty of men delegated to the somewhat thankless job of feeding the others. Also, though affairs of the kind are not expected to equal in the variety of food and the excellence of the service the best of modern hotels, a fair attempt should be made to supply such necessaries as water and a quantity of what has come to be known as the staff of life. Incidentally, the after-dinner coffee that has come to be such a staple in life should not be overlooked.

At the outing, affairs on the whole were well managed, and it must have been a captious critic indeed who could find fault. As the farm lies some 50 miles from New York city it was necessary for the procession to leave before breakfast; hence breakfast was served on arrival. Bacon and eggs bolstered up the ambitions of would-be record holders.

Immediately following the breakfast the various contests were started, and in arranging the program those who had the matter in hand showed great forethought and a lot of acumen in introduc-

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ing plenty of events in which automobiles were required. The outing was essentially a motor car dealers' outing and as such, automobile events, perhaps more than any other, deserved a prominent place on the program, and they got it.

Motor Car Events Prominent

Of a total of 15 events, five called for the use of cars, and every one of them drew well. There were at least a dozen entries for each. These five events were as follows:

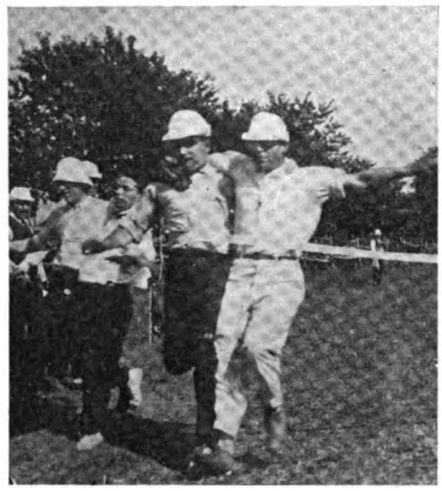
Forward and reverse race—The driver was required to drive about 50 yards ahead, reverse and drive backward to the starting line. This event drew out a large entry list and finally was won by A. Hartog at the wheel of a six-cylinder Packard. Hartog made the trip in 15⅗ seconds.

Speed guessing contest—The driver was required to cover his speedometer and drive a specified distance at a secret speed; the secret time set was 22 seconds, and H. B. Mall (National) hit it exactly.

Gymkhana race—The driver was required to drive to the first station, remove his coat and light a cigar; drive to the second station, uncork and drink a bottle of liquid refreshment; drive to the third station, sign his name on a piece of paper, put on his coat and button it and finish with the cigar burning. Fred Miller, with a six-cylinder Packard, won the event in 1:29⅘. On his first trial he was protested for failing to button his coat, and on a subsequent trial he beat all the others. His nearest competitors were W. C. Poertner and H. B. Mall, both in Nationals, who both made the trip in 1:34⅘.



In the wheelbarrow race there were many spills and more laughs. Gene Sullivan (riding) and C. Smith won the first heat and S. Marks and Arthur Haines won the final



This is the Bestar-Studebaker team which three-legged away with a three-legged race heat

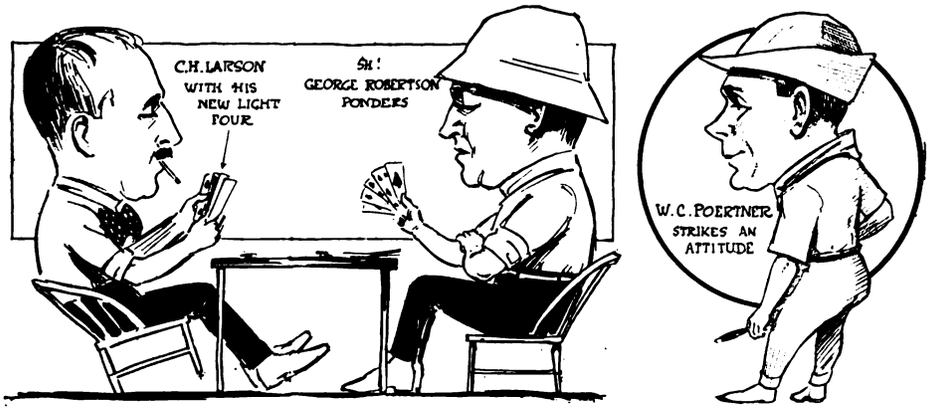
Potato race—Drivers required to carry a passenger who dropped six potatoes into as many baskets, the one covering the distance in the shortest time and having the greatest number of potatoes in the basket to win. This event caused much amusement and next to the speed guessing contest drew the greatest number of entries. W. C. Poertner, driving a Jeffery and with Roebensteik as bomb thrower, won, his time being 14⅘ seconds, with 5 potatoes in the baskets.

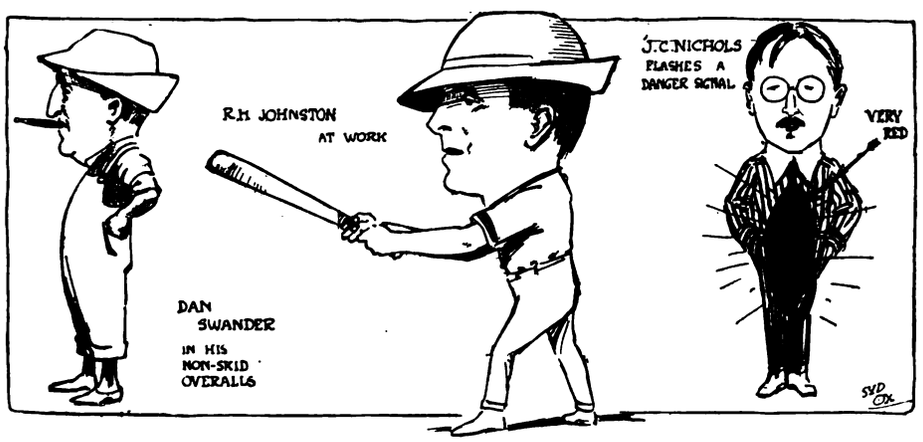
Athletic Events Amusing

Slow speed race—Drivers required to cover about 50 yards at slow speed in high gear without slipping the clutch or applying brakes. Chas. A. Hopfensack, driving a Chandler, won this event by taking 23⅗ seconds to cover the 50 yards.

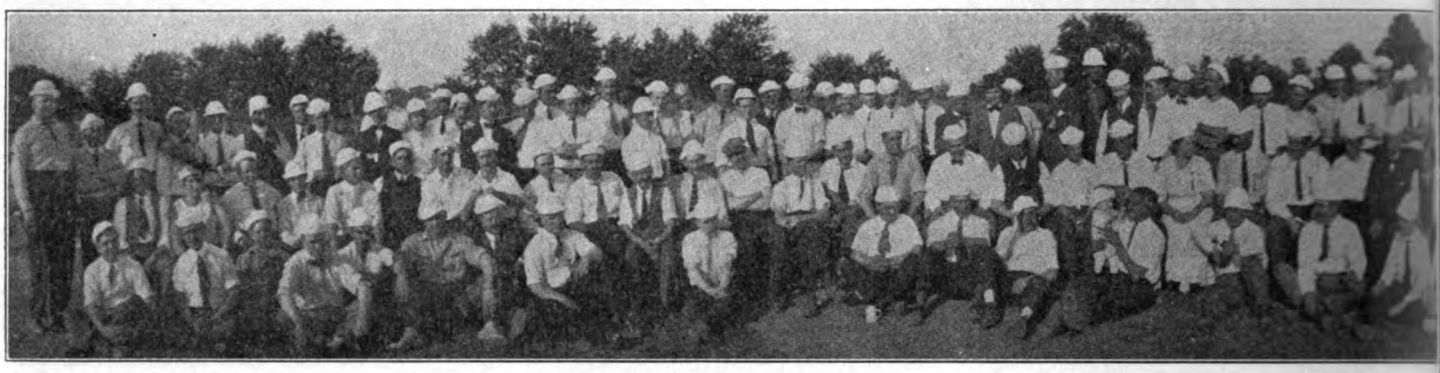
The other 10 events consisted of a wheelbarrow race which, after much merriment and more spills, went to Samuel Marks (Oldsmobile) and Arthur Haines (Rodney-Haines Co.); a fat man's race, which went, with much puffing, to M. A. Noonan; a sack race, which Gene Sullivan won because of the prodigious leaps he made; a three-legged race, which went to J. B. Breitenbach and A. Arbogast after the others had properly entangled their own legs; a 50-yard dash, which E. D. Studebaker took in 5⅕ seconds; a shoe race, which probably caused more laughter than any other event on the program, and which was won by E. C. Blake.

In this event the shoes were placed in a sack instead of being merely piled up. David Beecroft, Motor World, after a wonderfully effective combination of high-dive and tackle, landed on the sack





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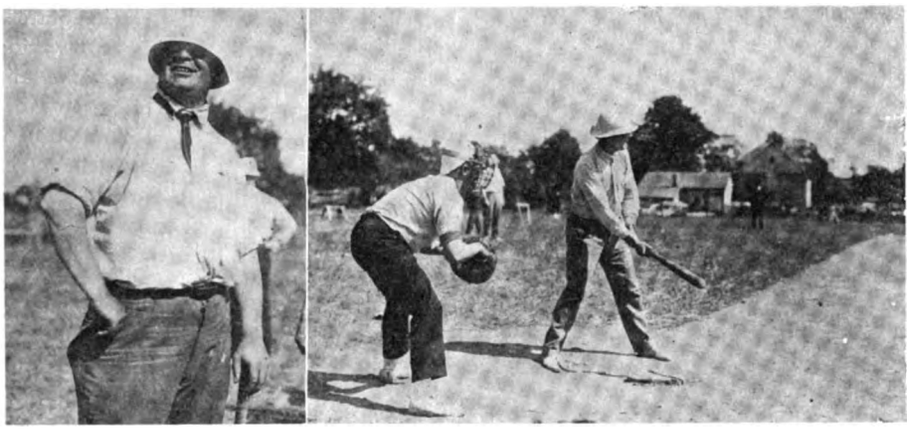


Only once during the whole day were all the big village motor boosters quiet together

and refused to be ousted until he had gotten both his shoes from it, but he was slow in lacing them and Blake beat him to the tape.

The golf driving contest for the more sedate guests was won by R. Godwin, who drove the gutty 200 yards—measure 'em—200.

NEW YORKS	Position	BROOKLYNS
D. Swander	p	J. Bastian
T. W. Sneed	c	Fred Miller
E. D. Studebaker	1b	J. Smith
C. Doty	2b	A. E. Randall
E. J. Sullivan	3b	E. C. Blake
J. Bestar	ss	W. J. Casey
R. H. Johnston	cf	J. R. McShane
W. C. Poertner	lf	A. Hartog
Geo. W. Greiner	rf	J. Bindrim



M. A. Noonan was proud of the fact that he won the fat man's race. Right—Capt.. Johnson of the New Yorks when he was not in the field

Also there was the justly famed baseball game. Capt. R. H. Johnston's New York Knights of the Big Stick had been waiting for a long time for a healthy wallop at Capt. Fred Miller's Brooklyn Pill Chasers, and the way they walloped them all over the lot would warm the cockles of any fan's heart. The final score was no less than 10 to 1. This is the way the teams lined up to the bat:

In the first inning, Johnston's Giants swatted the ball for three runs, and Miller's Mighties retaliated with a like number of runs. Swander, who has some wind-up, held the Brooklyns down to an egg the next session and the New Yorks came back with three more. In the third inning the Brooklyns found Swander again and sent one man home—and the New Yorks came back with three more. In the fourth the Brooklyns did not tally and the New Yorks rolled up only one. Miller's men succeeded in getting one more in the last inning, but the task of beating Johnston's men was too great and the game was called.

During every event and between them a troupe of 10 braw Scotties squeezed bagpipes; they amused themselves and no casualties have been reported. Later, about four-fifths of the party formed in parade behind the mammoth Scottish chief and a combined assault was made on the clambake. The tables were spread right out in the field and as the darkness shut down cars were lined up and under the glare of their headlights the feast went on uninterruptedly.

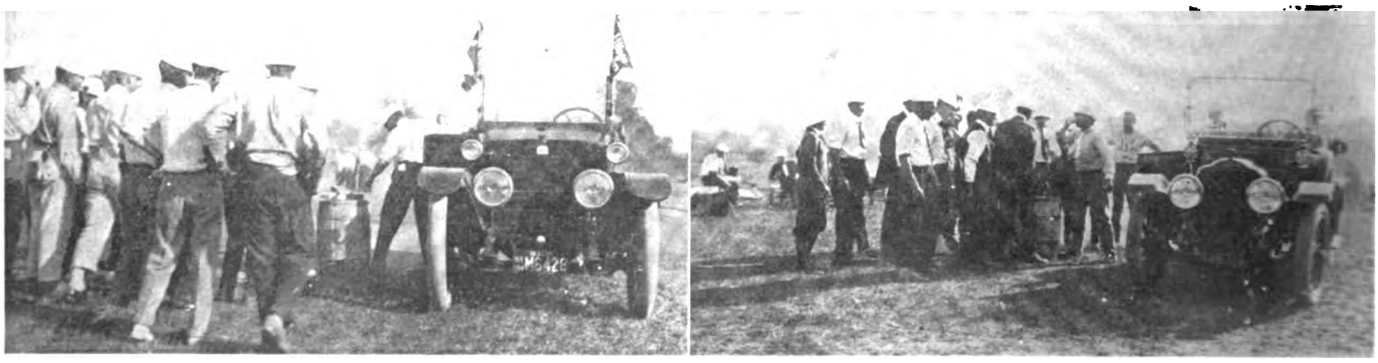
Goodfellowship Reigned Supreme

Throughout the whole of the program good fellowship prevailed. W. C. Poertner was just plain Bill; Alfred Reeves was Al.; Nichols was "J. C."; Haines was "Rodney." The dealers were more like a lot of schoolboys on vacation than a group of serious-minded business men. The outing did them all good; they all returned to their work feeling the better for it. And they will welcome next year's outing with that much more relish.

The summary:

Wheelbarrow race—First heat won by C. Smith and G. Sullivan; second heat, E. G. Baker and Isacson ;third heat, S. Marks and Arthur Haines; fourth heat, D. Beecroft and N. Lazarnick. Final won by S. Marks and Arthur Haines.

Golf driving contest—Won by R. Godwin (200 yards); second, G. Sullivan; third, Alfred Reeves.



At the first station in the gymkhana, drivers had to light a cigar; at the second station they had to uncork and drink a bottle of "pop" or beer

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and this was when the photographer set up his infernal machine and told them to "watch the bird"

Fat man's race, 50 yards—Won by M. A. Noonan; second, F. G. Hill; third, J. Kirk. Time, 5 seconds.

Three-legged race—First heat won by E. D. Studebaker and J. S. Bestar; second heat, J. Brietenbach and G. Arbogast; third heat, M. W. Colwell and E. H. Burgin. Final, J. Brietenbach and G. Arbogast; second, E. D. Studebaker and J. S. Bestar.

Fifty-yard dash—Won by E. D. Studebaker; second, G. Arbogast. Time, 5⅗ seconds.

Sack race, 50 yards—Won by Gene Sullivan; second, G. Arbogast. Time, 12⅗ seconds.

Forward and reverse automobile race—Won by A. Hertog (Packard), 15⅗ seconds; second, H. B. Mall (National, 16⅗ seconds; third, Geo. B. McCutcheon (National coupe), 17 seconds; fourth, J. Brietenbach (Chandler), 17⅘ seconds; fifth, M. E. Le Bon (Jeffery), 20⅗ seconds.

Secret time contest—Won by H. B. Mall (National), 22 seconds; second, A. Hartog (Packard), 21⅘ seconds; third, R. H. Johnston (White), 23¼ seconds. Secret time, 22 seconds.

Gymkana race—Won by Fred Miller (Packard), 1:26⅘; second, tie, W. C. Poertner (National), and H. B. Mall (National), 1:24⅘; third, D. Beecroft (White), 1:45⅗.

Shoe race—Won by E. C. Blake; second, D. Beecroft.

Slow speed on high gear—Won by Chas. A. Hopfensack (Chandler), 23⅗ seconds; second, E. C. Blake (Packard), 20⅗ seconds; third, R. H. Johnston (White), 20⅗ seconds.

Potato race—Won by W. C. Poertner and Roebensteik.

Geo. Robertson Cup won by William Parkinson.

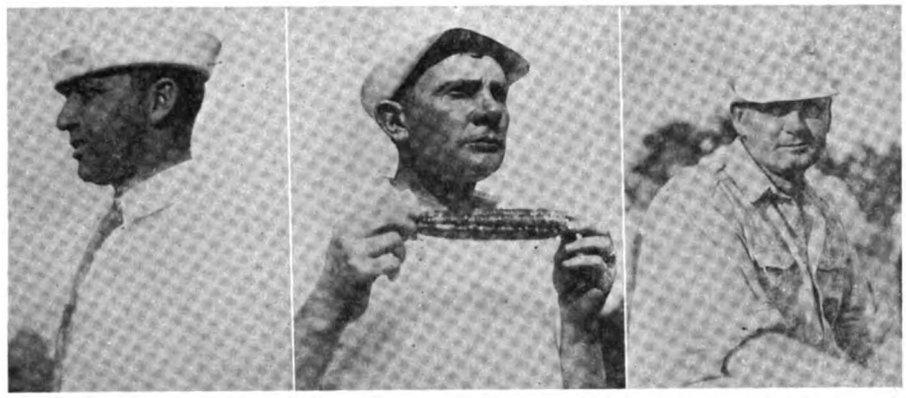
Among those present were:

C. A. Abbott, Packard Motor Car Co.; A. G. Jennings, White Co.; R. H. Johnston, White Co.; C. H. Larson, Cutting-Larson Co.; Ed. Hoopgarner, Swinehart Tire & Rubber Co.; N. Lazarnick, A. Linde, P. H. Lucas, N. F. Miller, J. C. Nichols, G. P. McGowan; F. H. Miller, Packard Motor Car Co.; H. B. Mall, Poertner Motor Car Co.; Wm. Parkinson, Stutz Motor Car Co.

W. C. Poertner, Poertner Motor Car Co.; A. E. Randall; Geo. H. Robertson, Auto Supply Co.; Louis R. Smith, Motor World; Geo. Stowe, Chalmers Motor Co. of N. Y.; Dan. Swander, Firestone Tire & Rubber Co.; S. S. Toback, A. Elliott Ranney Co.; John M. Wierk, Stutz Motor Car Co.; Wm. B. Wolff; J. Rhode, Splitdorf Electrical Co.

H. K. Southerland, Lyons-Atlas Co.; Wm. A. Allen, Allen Tire Cover Co.; David Beecroft, Motor World; Julius Bindrim, Bindrim Auto. Supply Co.; H. A. Bonnell, Bonnell Motor Car Co.

J. B. Breitenbach, Chandler Motor Car Co.; Coker F. Clarkson, Sec'y S. A. E.; J. H. Cooper; A. B. Cordner; C. H. Cox, Cox Pneumatic Cushion Co.; J. B. Eberhardt; Raynor Godwin, Poertner Motor Car Co.; Geo. M. Gregory, Whiting Motor Co.; F. G. Hill, Republic Tire Co.



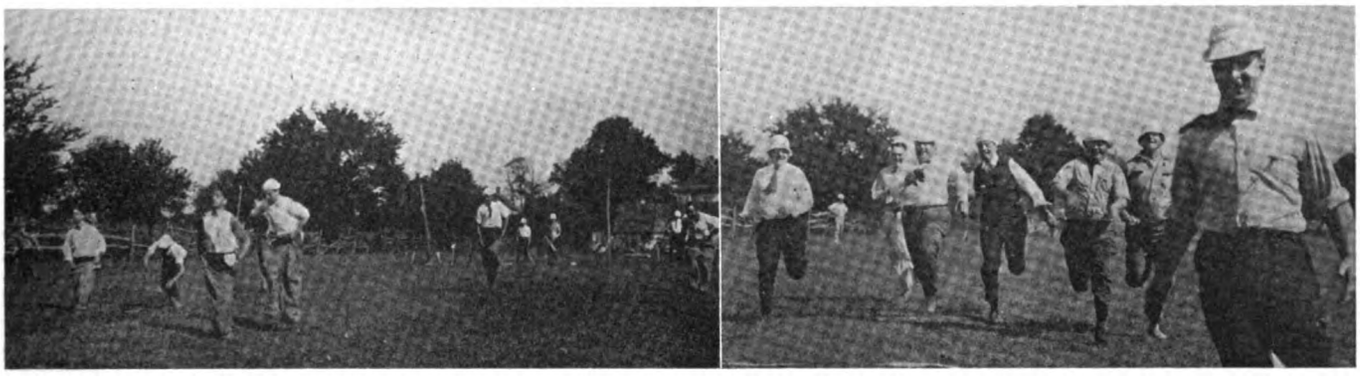
Left—W. M. Sweet, chairman of games committee. Center—W. C. Poertner doing two things at once. Right—Republic Tire Hill's non-skid smile

HOW BOOSTERS' OUTING WAS RUN AND ITS COST

It is not difficult for dealers who are so minded to arrange an outing of the kind. It requires a certain amount of hard work, but expenses are not necessarily high. The staging of the Boosters' outing was placed in the hands of a number of committees, who gave freely of their time that the event might be a success.

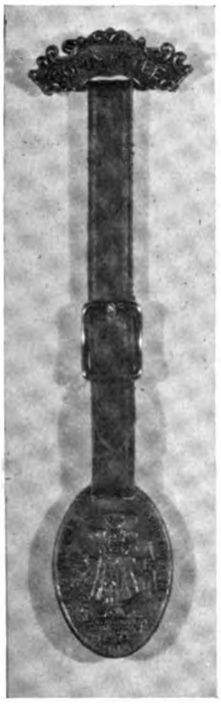
The commissary department was under the direction of Horace A. Bonnell, who was chairman. Fred Wagner, who was the host, was the only other member of the committee.

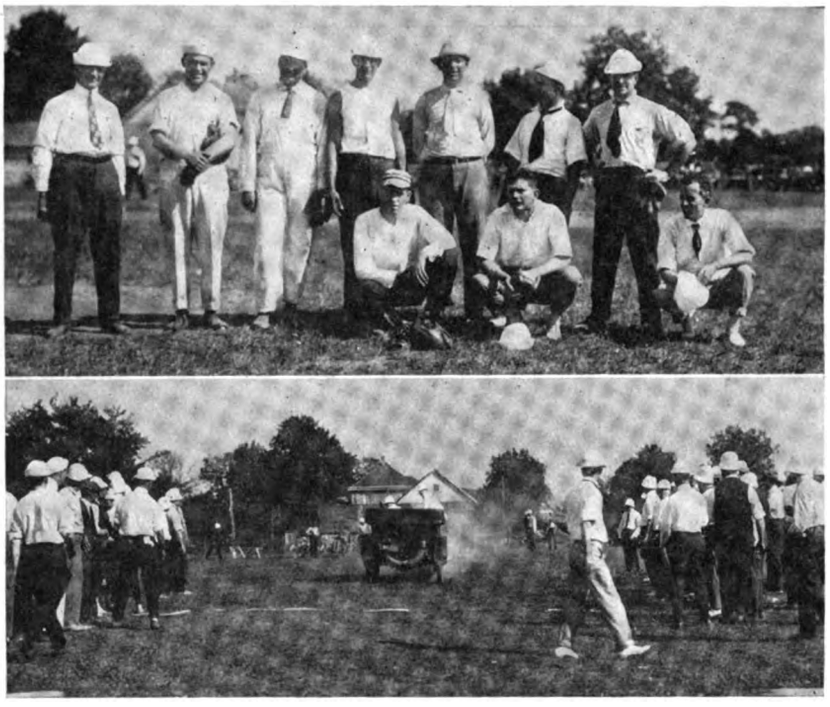
The game schedule and all that pertained to the games was looked after by William M. Sweet, of the Motor and Accessories Manufacturers Association, who was chairman. Those who assisted him were Charles A. Stewart,

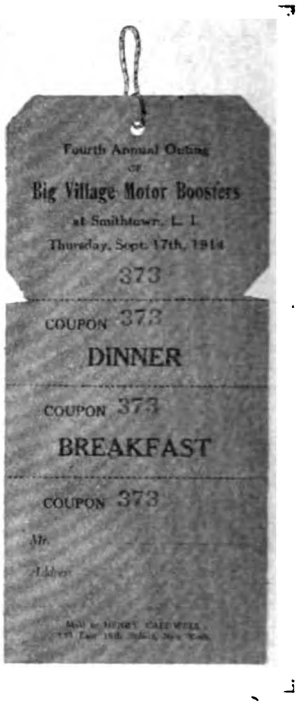


Gene Sullivan during one of the intervals when he hit the ground in winning the sack race. Right—M. A. Noonan, who appears to be pushing the others aside, winning the fat man's race

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Left—The combination souvenir and badge. Upper—Johnston's New York ball team: left to right: H. A. Bonnell, umpire; E. D. Studebaker, D. Swander, E. J. Sullivan, R. H. Johnston, captain; C. Doty, J. Bestar, Geo. W. Greiner; sitting: T. W. Sneed, W. C. Poertner. Lower—Mall driving and Poertner "perched" on one of the Nationals in the backward and forward race. Right—Tickets had coupons for breakfast and dinner

secretary of the New York Dealers' Association; C. S. Wells, Spooner & Wells; C. J. Dieges, Dieges & Clust; J. Bestar (New York Herald), M. J. Sullivan, Duncan Curry and W. J. Morgan.

The whole matter of badges and and souvenirs was cared for by Edward F. Korbell, who constituted a committee all by himself. Korbell arranged for the 14 prizes that were awarded. These consisted of 10 cups, a watch, a silver knife, a tennis racket and one dozen golf balls. These prizes totaled $127.

The badges, which also served as souvenirs, were in the form of watch fobs, a bronze tab being suspended from a small leather strap. There were 250 of these badges provided at 32½ cents each.

Although every person who purchased a ticket received a white hat, this did not cost the Boosters anything. The hats were donated by Wm. Allen, of the Allen Tire Cover Co., and, it is understood, cost in the neighborhood of 27 cents each.

The music that was provided by the Highland chiefs cost $8.

The expenses of the outing were offset by the sale of tickets, each guest subscribing $5 for a ticket. Although not all returns are in as yet, it is estimated that approximately 160 tickets were sold. The actual printing of the tickets themselves cost nothing, Jacques & Co., who did the job, having refused to submit a bill.

Each dealer was sent a ticket, which he was required to pay for it he attended the outing. In this case the lower tab was detached, signed and returned to the committee. The other two tabs were surrendered, one for breakfast and the other for dinner.

As each car passed the gate coming in, the driver was presented with a card, upon which he placed his name. Afterward the card was placed in a receptacle for the drawing of the tall silver cup presented by Geo. H. Robertson.

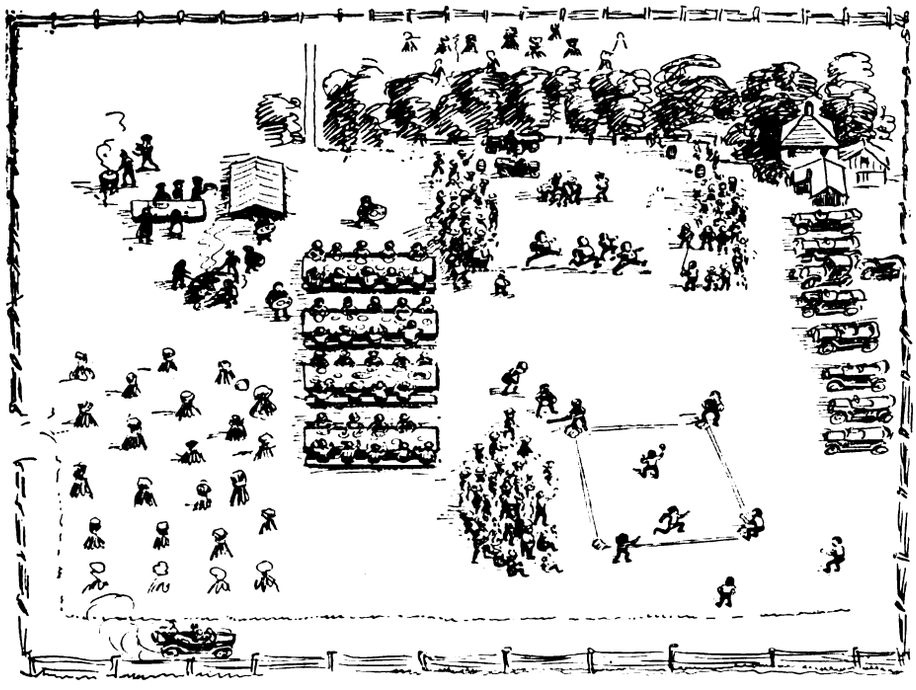
Other than the committees that have been mentioned there were the following:

Publication: Henry Caldwell, chairman; J. C. Wetmore, Duncan Curry.

Publicity: Ed. F. Korbell, chairman; L. A. Smith, J. Bestar, M. J. Sullivan, Roy Drake, Duncan Curry, C. E. T. Scharps, R. M. Cleveland, J. C. Wetmore, Burton Brown, M. W. Colwell.

Transportation: Geo. H. Robertson, R. H. Johnston, Wm. Parkinson, M. W. Colwell.

Referees: S. S. Toback, H. A. Bonnell.
Starters: Richard Kennerdell, Chas. Dieges.



The picnic was held in a field containing about 5 acres and there was plenty of room for the several events that were run off at the same time. The tables for the clam-bake were removed for the automobile contests

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Sales Opportunities in Municipal Business



"One of my best ads," asserted Reilly, as the car tore down the street

City Departments in Need of Cars, Asserts Reilly—And It Not Only Is an Often Neglected Field But Is Good Advertising

By Ray W. Sherman

"THERE comes Cragin!"

Both the Sales Manager and Reilly stopped and looked back up the street as a shrill siren split the air with its raucous howl and a bright red runabout came down the street. At the wheel was a fire department chauffeur who "had 'er wide open." Beside him was the chief, in white helmet and white rubber coat.

"He always wears his helmet and coat to a fire," laughed Reilly.

"Isn't that what they're for?" questioned the Sales Manager.

"Not to fires—at fires; but Cragin's spectacular. If there's a chance to get in the limelight, he's there."

"Some outfit," smiled the Sales Manager.

Fire Car a Good Ad

"One of my best ads," earnestly asserted Reilly, as the fiery looking outfit tore on its way down the street and disappeared in a cloud of noise. They could hear that horn for fifteen minutes after it stopped blowing.

They continued on their way and into Reilly's salesrooms where Tommy Trumbull and a man and his wife, prospective buyers, were looking covetously at a new model touring car.

"There's Cragin and his car," said Reilly. He pointed to a framed picture on the wall of the office. "And there are two or three more that I'm going to hang up—perhaps. I've got the police chief in his car and I hope to have a police patrol and an ambulance there before I get through."

"Got them lined up at all?"

"Just slightly," replied Reilly. "I think I'll get the police patrol if nothing happens but I'm liable to have a harder job with the St. Mark's Hospital ambulance. They're dickering for price. They have an economical streak."

"Isn't the city economical?"

"Buying a good thing when you find it is economy, isn't it?" Reilly smiled slyly.

"Oh!" This was the Sales Manager's sole comment. It was sufficient. He understood.

Plays Politics to Win

"I may have to work politics a little to get these city orders through, but my conscience doesn't trouble me much on that score because politics enters into almost everything the city buys. If a man doesn't play politics he doesn't do business. I don't mean that I pay graft or anything of that sort; I merely pull a wire here and there."

"Not everyone could do that," asserted the Sales Manager.

"Not everyone tries," came back Reilly.

"Well, but——"

"But nothing, Jim! How many dealers do you suppose there are in this country who are passing up opportunities for municipal business?"

"Don't know."

"I'll bet there is a big bunch of them," challenged the shiny-pated dealer. "If I succeed I'll have a lead on the city business in this town that will be hard to overcome; and I never would have had it if I hadn't gone after it. It's an opportunity for any dealer in any town of any size, Jim, and generally you find that some one man has got the business tied up. That's what I want to do."

Helps Give Name Publicity

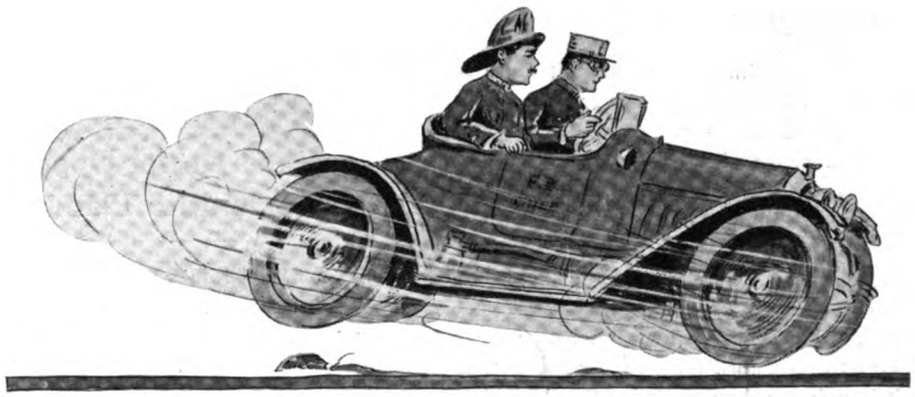
"What good does it do? Is there any more money in it?"

"Not necessarily. Perhaps less, but it is good business from my point of view. Maybe I'm wrong, but I've got to stand or fall on my own judgment and it looks like good business to me, so I'm doing it. It's advertising for the Sennett car if nothing else; and that helps."

"Yes, I suppose you must get some publicity out of such a thing as that fire chief's car."

"I sure do! When the chief flies around town in that outfit he attracts some attention, believe me! And when he pulls up at a fire and leaves the car in the street nearby there is always a crowd around looking over that red wagon of his. And they inspect it in the garage at headquarters; it gets a lot of looking over. There isn't a car in town that is better known. The beauty of it is I got permission to put a little plate on the dash with my name and the Sennett name on it. The Sennett name on the front shows up well, of course, and the added plate is just that much more."

"Good scheme!"



A shrill siren split the air. At the wheel was a fire department chauffeur who "had 'er wide open." Beside him was the chief in white helmet and white rubber coat

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"Yes, you couldn't do it on a privately owned car; the owner wouldn't stand for it, but on this class of car it's different. To start off with, the men who have the say-so about the matter are friends of mine and, anyway, I took a chance and put it on and no one ever said anything about it—so there it stays."

The Sales Manager smiled.

"The police chief's car I had painted blue. That may not be the proper color for a police department but I convinced them that it was; I didn't want to make the police chief's car the same color as Cragin's car, so I had to dope out some other color scheme. Chief of Police Metz isn't over-fond of Cragin and I told him on the quiet that he didn't want a car the same color as Cragin's.

"But I made it a very distinctive blue. There isn't a blue in town like it. It's bright and flashy and is as well known as Cragin's runabout. Between the two of them they manage to give the Sennett name considerable publicity."

"But does it bring any business? Is it worth while?" skeptically questioned the Sales Manager.

Akin to National Advertising

"Did the last ad you ran in the Saturday Post bring in any business? Did it make any sales?" retorted Reilly.

"Why—well—that's different——"

"Not a darned bit different!" came back Reilly. "I can't trace sales directly to this any more than you can trace your business directly to your national advertising, but you still insist that your advertising brings in business, don't you?"

"Certainly."

"Well, you know yourself that there is nothing like keeping a car in the public eye, and having them owned and operated in city and other public service is one good way. Selling runabouts and coupes to doctors and professional men is another way. But the point I make, Jim, is that there are many fields of business such as this which are overlooked by many dealers. It isn't necessary to wait until the city advertises that it is going to buy a car for the fire chief. Go after them and tell them the fire chief needs a car; almost any old fire chief will side in with you on that proposition. And if you get the fire chief he generally can use a lot of influence in his own behalf. There are fine arguments as to why a police or fire department needs cars. You know—up-to-date—speed—get there quick, and such stuff.

"Aside from this there are other municipal departments which are using horses and carriages for inspection work and other purposes. There is the water department, the light and power department, and the street department. No one ever got after these departments in this town and I think there is some business there. It stands to reason that a street commissioner, who has charge of miles of street, can do better work if he can make the speed which a motor car makes possible.

Chance to Sell Used Cars

"If a city is really economically inclined, this often furnishes a market for rebuilt used cars. They can be made to look real ship-shape and still give all the service that is required. I know of a fire chief in one town who used a rebuilt car for four or five years with great satisfaction. And I know of another dealer in a big Eastern city who sold two or three dozen of his cars to the city all in one order. In a big city it, of course, furnishes a bigger field, and in a smaller city it certainly is not to be neglected."

"There ought to be a chance in Sayanna, Reilly. There are a lot of horses and buggies in our city service."

"And you have another fine argument in your favor there," added the dealer. "Your factory is there and it is always favorable to sales to have the factory located in the same town as that where you try to make the sale."

"But I should think it would be a losing proposition to keep these city cars operating," volunteered the Sales Manager. "They get rough service, politics are full of graft and there is such a liability of accidents through joy-riding after hours by officials and employes."

Reilly smiled meaningly. "There's where you're wrong," he said. "There is no money lost keeping these cars running. You can always charge a fair price for repairs and overhauling and get your money every time. A municipal corporation is not like a private corporation or an individual; they don't kick so much. I don't mean that I soak the city; I merely mean that I feel free to make a fair charge every time.

"This joy-riding acts in my favor in certain respects. If a car is broken while an official is out on a joy-ride he certainly isn't going to have a fuss made over the repair bill, for that would only serve to draw attention to the accident.

Other Opportunities, Too

"Municipal business is only one phase of the trade which is open for invasion but often neglected. Much can be accomplished if a dealer investigates the situation in his city, finds a certain corporation, for instance, whose salesmen might work better if they had cars and makes the corporation a prospect. The point I make is that it isn't necessary to wait until these prospects turn up; dig them up."

The siren came tearing down the street again. Cragin still wore the white helmet and coat.

"What's his hurry now?" asked the Sales Manager.

"Probably got a lot of work to do at the office."

Makes the Salesman Fit the Prospect

Des Moines Dealer Operates on Scientific Plan.

"Out in Des Moines we have different types of salesmen. We have in our organization a man who sells to farmers. He knows every detail of farm life. He can sit on top of a rail fence and whittle all day if necessary. That man works among farmers. Now I could not sell a farmer myself to save my soul, but this man knows how to deal with farmers, and when he goes after a farmer's order he gets it," said John H. Gibson, Iowa Automobile & Supply Co., Des Moines, Ia., at the recent Chalmers dealers' convention.

"We have yet another salesman who keeps in touch with all of the fraternal organizations. He studies the sporting reports every day. He knows how to converse with men who are interested in prize fighting or baseball. He knows the gossip of the leading lodges, and he sells to that class of men. In Des Moines we literally own that business simply because we have the right kind of salesmen meeting these people.

"Yet another man is an expert on technical construction. He studies not only our own cars but all other makes. He can argue about a technical point that I don't even understand. And when a customer comes in and wants to talk specifications and technicalities, we send for this man.

"I know a lot of the business men in our city. I handle many of them, but if any of the salesmen get hold of a grouchy character or a hard man to deal with, they turn him over to me. Not because I am any better salesman, but because I can talk with that class of prospects."

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Dealer's Legal Status

What Chance Has the Dealer Got to Get Deposit Back If the Manufacturer Goes Bankrupt - It Is Best to "Look Before You Leap"

By Geo. F. Kaiser

THE QUESTION

Q.—There is a point of very great interest to automobile dealers at the present time and that is the safety of their deposits with distributers or manufacturers. I have just lost a deposit through the failure of a manufacturer.

It seems to me that the deposit is only a guarantee of good faith and protection against unsettled accounts; that the deposit money is really the property of the dealer and not an asset of the distributer or manufacturer.

I will look forward with a great deal of interest to your reply.—W. W. B.

THE ANSWER

A.—It is true that the money a dealer deposits with the manufacturer or distributer on entering into an agency agreement is merely given as security for default on the part of the dealer. In the great majority of cases the contract also provides that the deposit is to be considered liquidated damages if the dealer fails to carry out the obligations he has assumed.

Unfortunately for the dealer, he gives up all title to this money on turning it over to the manufacturer, and the title to the money passes to the manufacturer and it becomes a part of his estate. The manufacturer can in no way be considered a trustee of the money. He receives it somewhat as a bank receives money from its depositors.

Bank Depositors May Lose

When a bank goes into insolvency or liquidation its depositors cannot receive back the exact sums they have paid in but must share in a pro rata distribution with such other creditors as there may be; even if the claims of the latter be for rent, goods sold and delivered, or services rendered.

The relation of dealer and manufacturer in this instance is the same, and when the latter becomes insolvent the dealer can receive back only a certain proportion of his deposit, the amount, of course, being determined by the amount of assets and the amount of liabilities.

As to the question of "safety of deposits," the only way it can be determined is by investigating the financial standing of the manufacturer before entering into any contractual relations. A deposit in the possession of some manufacturers will, of course, be just as safe as if it were in a good, sound, conservative bank.

Litigation Over Car Deposits

There has been more or less litigation between dealers and manufacturers over the matter of deposits. The case of the Velie Motor Car Co. vs. Kopmeier Motor Car Co., reported in 194 Fed. Reports, at page 324, was an action by the manufacturer to recover $9,000 damages for breach of contract.

Pursuant to the terms of the agency agreement, the dealer had deposited $1,000, which was to cover a shipment of 50 cars. Thereafter the dealer rescinded the contract and when suit was brought against him he sued to recover the $1,000 which had been given as a deposit.

Court Gave Dealer's Money Back

The court, after examining the agency agreement, decided that it was merely executory and that there was no obligation on the manufacturer to furnish the specified number of cars. It further contained the provision giving the latter the right to rescind at its pleasure. The court, therefore, held that the dealer should be allowed to recover the money which he had given as a deposit, on the theory that if the manufacturer had the right to rescind, the dealer had an equal right and that an agreement which obligates only one party is null and void.

In another case, that of Gile vs. Interstate Motor Car Co., reported in 145 N. W. Reporter (North Dakota), at page 732, the dealer was not so fortunate and failed to recover back his deposit. The agreement in this case provided that the dealer should purchase 50 cars and should make a deposit of $1,250, $25 of which was to be credited on the purchase price of each car when sold.

The dealer failed to purchase any cars and sued to get back his deposit. There was a stipulation in the contract which authorized the defendant to retain the deposit money as liquidated damages in case the dealer failed to carry out the obligations imposed upon him by the contract. The court decided that on these facts the manufacturer should be allowed to retain the deposit money and that the dealer could not recover back the money he had given as security, because the contract was valid and binding.

Mutuality an Important Element

As in these two cases, the decisions in the majority of cases dealing with deposits have hinged on the sole proposition as to whether or not the contract was valid and binding.

It must be remembered that a contract lacks mutuality when only one of the parties entering into it is bound by it, and this is true when a dealer agrees to purchase and accept a certain number of motor cars, depositing a sum of money as part payment, and when the contract to sell and deliver the machines is unenforceable, it providing that the manufacturer shall not be liable in case of his failure to deliver the motor cars for any cause whatsoever.

ADVERTISE—AND KEEP RIGHT ON, ADVISES HUGH CHALMERS

"My vision of the Chalmers company is not bounded by July first or a year from July first, because we are all young in this business," said President Hugh Chalmers, at the recent Chalmers dealers' convention. "We don't want to quit business.

"And you dealers don't want to quit your business any more than I want to quit mine.

"So I say to you, don't stop advertising—do more. Don't cut down the supply of prospects at its source—turn on more power.

"Some of you may be good advertisers, but not enough of you.

"We make a mistake in thinking that advertising only pays when it drops in on a man just as he is going to sign an order for a motor car. When you read all the ads in the Saturday Evening Post you do not say, 'When I want soap I will ask for Ivory,' but the moment you want soap and go to buy it 'Ivory' comes to your mind. Your mind has retained the big thing in some ad you have read."

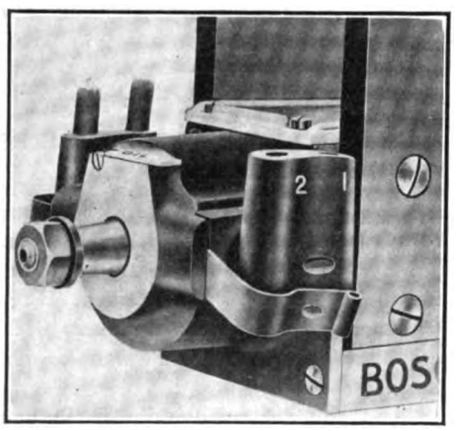
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New Bosch High-Tension Magneto for Small Four-Cylinder Motors

Double Slip-Ring Is Distributor Also—Primary and Secondary Windings Not Connected—Simple Vibrating System Added

Two entirely new Bosch systems to meet the requirements of the tendency in motor car design have been placed on the market. They are a vibrating duplex system to make possible certain ignition when the motor is cranked at low speeds and an entirely new design of high-tension magneto for the popular-priced, light four-cylinder car.

With the increasing number of small four-cylinder cars of light weight, the Bosch company has kept its product up to time by the marketing of a greatly simplified high-tension magneto especially designed for this work. By the elimination of the distributor as an independent unit it has become possible to reduce materially the number of parts



Removing the brush holders is a simple matter, as they slip out easily when the spring arm is pushed down

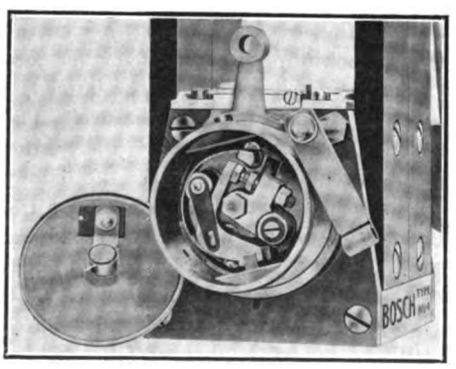
used in the manufacture of the magneto and to make it exceedingly light.

The function of distributing the ignition current has been placed in the new instrument on the slip ring. The single slip ring, however, has been replaced and instead a double ring has been substituted which not only acts as the collector for the high-tension current but as the distributor as well.

Another feature of the new Bosch magneto, which will bear the name NU4, is the use of two entirely separate armature windings. Hitherto the secondary winding in the Bosch magneto has been practically a continuation of the primary. Its inner end connects with the primary and the other end is led to the insulated slip ring or current collector ring which rotates with the armature shaft. From the slip ring the high-tension current is collected by a brush and led to a central point on the distributor block. It is taken from this point to the various plug points by a rotating brush.

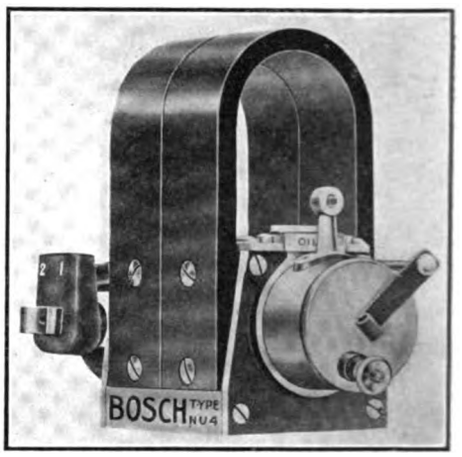
On the NU4, however, an entirely different system has been worked out. The primary winding, as in other types, has one end connected to the armature core and the other end to the insulated contact block supporting the long platinum screw on the contact breaker. The breaker box mechanism is in every particular similar to that used on previous Bosch models.

It is in the high-tension winding that the first difference manifests itself. In the new model there is no connection whatever between the primary and secondary windings. In fact, they are heavily insulated from each other. The two ends of the secondary winding are connected to two metal segments located on a double slip ring. This double slip ring is directly on the armature shaft and rotates with it.



The regular Bosch high-tension type interrupter is used, without change, in the new model instrument

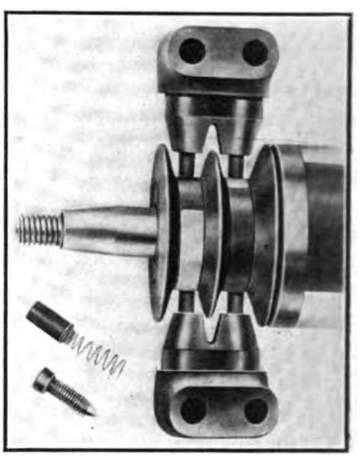
Bearing against the double slip ring are two pairs of brushes. Each of these four brushes forms the terminal of a



New Bosch magneto, type NU4, a simplified design intended especially for use in small four-cylinder motors

spark plug wire. As the armature rotates, the segments form a contact in turn with each of the four brushes, sending the spark to the plug to which contact is made. The distribution of the high-tension current is thus effected without recourse to the ordinary type of distributor.

The keynote of the new magneto is



Two slip rings are used instead of one, and they are caused to act as high-tension distributors

the slip ring which so ingeniously takes care of the needs of the collecting and distributing functions of the magneto. It is made in one piece, with two deep grooves in place of the single groove on other Bosch rings. It is of hard rubber insulating material. Imbedded in each groove is a metal segment. The two segments are set diametrically opposite on the armature shaft. They are insulated from each other as well as from the core of the armature and the magneto frame.

The four brushes are supported by two double brush holders, as shown in the accompanying illustration. With this arrangement the magneto will give two sparks to each revolution from alternate

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segments on the collector-distributor ring. The brush holders fit into openings provided in each side of the driving shaft end plate and are held in place by catch springs. The brush holders, together with the brushes, can be pulled out of place without tools.

The NU4 magneto is installed so that it is driven at engine speed. As there will be a surplus spark in each cylinder 360 degrees behind the effective spark or one revolution of the crankshaft, the timing must be such that the inlet valve has not started to open at this time and so that the exhaust is preferably still open. Under average conditions this is secured if the magneto is fitted so that the interrupter housing is in full retard position just as the interrupter screws are about to separate when the number 1 cylinder is on top center. At this time the metal segments of the slip ring should be in contact with the brush marked 1.

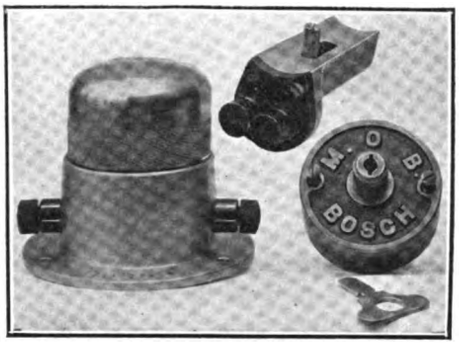
The magneto is suitable for installations up to 30 horsepower. It can be used as the sole source of ignition on engines up to this size, being of independent design. It can, however, be used to advantage in connection with the Bosch Duplex above described.

The vibrating system is designed to render unnecessary a dual ignition system on cars that are cranked by a starting motor at such a low speed that the ignition current from the ordinary magneto is insufficient to give certain ignition. Instead of using independent current supplied by a set of dry batteries or by some other source, the new Bosch system takes the primary current from the primary winding of the magneto and by means of an enclosed type of coil and a battery placed in series with the primary winding produces the high-tension spark necessary at the plug gaps.

The number of extra parts required with this new system is small. No additional wires running to the magneto are needed and the timing device which is already incorporated in the magneto suffices for the purpose of directing the spark to the proper cylinders. A further simplification of the system is secured by taking the connections necessary for the operation of the system directly from the starting switch instead of placing another switch on the dash.

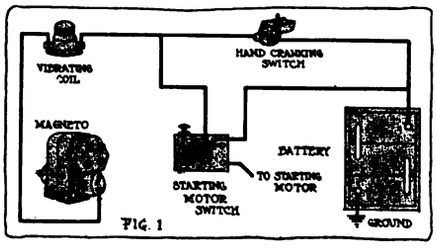
When the starting pedal is depressed the vibrating duplex system is thrown in; the coil receives current from the battery as soon as the starting switch reaches its first contact point.

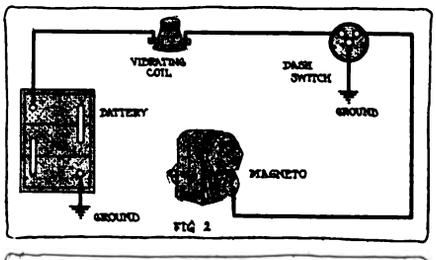
The coil is so constructed that it will operate on as little as 4 volts. In other words, the functions of the secondary winding in the magneto are for the time fulfilled by the little vibrating coil. The contact is made, broken and timed through the breaker box of the magneto in the ordinary manner, so that as far as the wiring of the magneto is concerned no alterations are necessary.

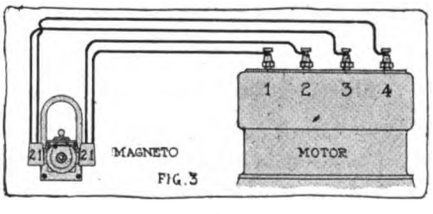


The Bosch vibrating duplex system permits easy starting by generating a hot spark at the lowest speeds, using current from the primary winding of the magneto. Parts, left to right, are coil, crank switch and dash switch

In case the starting motor for some reason should fail to operate, the new duplex system works satisfactorily. A special switch can be built into the starting crank end of the engine so that when the crank is inserted in its place







1—Wiring diagram of the vibrating duplex system when used in connection with a starting motor. 2—Wiring diagram of the same system used with a motor that is not equipped with a starter. 3—With the NU4 magneto there are four wires direct to the plugs

it automatically closes the circuit and throws the vibrating coil into operation. It must be understood, however, that the system is not intended to displace the separate battery system as a source of running current. It is merely for starting purposes and at all other times is not in use.

One of the chief uses for a system of this nature is for women drivers who through the failure of the starting system due to a nearly-discharged battery are compelled to use the starting crank. In an incident of this kind the motor could readily be started with a turn of the crank, provided at least four volts are available.

Cars not equipped with starting motors can also make use of the system to provide a means of easy starting without an entirely independent battery ignition. It is also possible to eliminate dash complications in the installation of the switch when there is no starting switch to make use of. A wiring diagram showing how this can be accomplished is given. Only one wire running from the switch to the magneto is employed. When the switch is in the off position this wire conducts the battery current from the vibrating coil to the magneto primary, thereby assisting the magneto at low or starting speeds. The component parts of the system, including the switch which can be built into the starting crank end of the motor, are illustrated herewith.

Solder For Mending Aluminum

A solder which is claimed to make a perfect joint between pieces of aluminum is made by the German-American Aluminum Co., 25 West 42nd street, New York city; the solder is a German invention and is manufactured in Germany and also in this country. The solder can be melted with an ordinary blow-torch, requiring a temperature of about 400 degrees Fahr., and is run into the crack between the pieces, a V-groove being made to facilitate the run. The cost of doing the work is not more than two-thirds of the cost of doing a welding job, and the makers guarantee that when the work is properly done the aluminum will break before the soldered joint.

No Postponement of Panama-Pacific

Effectually disposing of rumors to the effect that the Panama-Pacific National Exposition in San Francisco would be postponed, President Chas. C. Moore has caused a letter to be sent out to all commissioners from foreign countries assuring them that the exposition will be opened on time. In many quarters it has been supposed that the foreign war situation would necessitate a postponement, but this, President Moore states, will not be necessary. The exhibition will be opened on February 20.

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What Do You Think of Bargain

The More They Come the Worse It Looks for the Bargai Price Is Sufficient to Start a Row in Som

Bargain methods in the supply and accessory store!

Are they good?

Decidedly not, according to the opinions which appear on these pages!

When J. K. Marston wrote that letter which was printed in **Motor World September 2** he did not recommend that goods be **sold all the time at cut prices** in the hope of **big business** and a **small profit** with a **quick turnover.**

His idea was that a **single article** should be **cut for a short period.** He recommended that a "leader" be **cut for a week** in the expectation that customers would come in to **get the bargain** and would **spend money for other goods** which were **not cut in price.** These extra purchases would help make up for the loss on the bargain and would **make new customers** for the store. It would help trade.

One of the **problems** which seems to be recognized by the trade is the **impossibility of putting the price** of the bargain **back** where it was **before the cut.** Supplymen have said it **cannot be done,** that an article **once cut is cut forever.** Others **favor** the **plan.**

The Motor Shop, Indianapolis, this week says it would be better to forego the bargain business and **put a little more money into advertising.** One of the following opinions is from a manufacturer and another from a jobber: **Anyone can get in.** Go back to Motor world of September 2, read Marston's letter on page 24 and **tell us what you think.** Your name will **not** be used if you **so request.**

Culbertson Says No Kind of Cut Price Can Ever Be Good Business

The Store That Cuts All the Time He Says Must Needs Sacrifice Service and Often Quality Too— Tells of His Experiences

Detroit, Mich.

Motor World, Gentlemen:

I have noted, with no small amount of interest, the stand taken by the automobile accessory retailers, the result of your having questioned their attitude towards adopting "bargain day" methods —price cutting.

At the outset it will be understood that everyone connected with this firm is an exponent of the principles of legitimate trading.

Manufacturers Not in Favor

Before the retailer, we find the manufacturer setting a price for his goods which embodies a fair margin of profit for the retailer, considering the expense of distribution. Out of fairness to those dealers whose expenses are such as to not allow "shading" of prices, it is to be regretted that the producer is restrained from correcting this practice.

No manufacturer wants the regular prices for his goods sacrificed to satisfy the whim of the retailer wanting to do a "big" business with utter disregard for profit.

Must Get Price to Break Even

Will Motor World kindly interview those persons in favor of legitimate trading and the ones who are featuring sales and slashing prices? Go beneath the surface—into the homes of these men and set forth your findings in a subsequent issue.

Representing the majority of the automobile accessory jobbers and dealers in Detroit, whom I have interviewed, the fact of price maintenance by nearly all is evidenced by the service being offered gratis—free air, inspection and in numerous cases the loan of some article, for which the borrower has temporary use only. In the aggregate this costs the dealer considerable. He must secure the market price for his goods to balance this deficit.

"Bargains" Not Always Bargains

If it were possible to totally stamp out the unreliable, inconsistent tradesmen—and I use these words to express the general opinion of manufacturers towards price slashing retailers—conditions affecting the distribution of automobile accessories would be greatly improved. In most cases you will find "bargain lots" to be shop worn, "seconds," or of obsolete make.

The maker's guarantee is usually withdrawn and Motor World would be interested in the experiences members of our force could cite relating to purchases of such goods. In one case the purchaser of a horn at a "cut price" store received an article which was of service one hour. He came to us with the instrument, and we jokingly referred him to the place at which he had bought it.

Cut Goods Were Unsatisfactory

He had been there, and they claimed not to know anything about the construction, and furthermore, had no service with which to make it good—nor would they replace. We sold that man one of the best horns in stock, which we guaranteed to be of service for one year. He now buys his supplies from us entirely—and we absolutely guarantee every article we sold to him, for a given period, which we are enabled to do through the purchase from the maker from whom we have recourse in case of defect.

Often Sacrifices Quality

Frankly, I believe the man who will shade prices will sacrifice quality; therefore, he is a menace to the manufacturer, the tradesmen in like lines, and the user. Whenever I hear of a man becoming imbued with the price slashing mania, I put him down as a person of whom to keep clear. I am not looking for something for nothing, and the "gift horse" adage cautions me to be on the lookout for a "sell."

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Methods in the Supply Store?

heme Suggested by Marston—The Mere Mention of a Cut
ıarters—Read Culbertson's Letter—It's Hot

The "poorhouse" of the automobile trade has always been the house cutting prices.

I have been at length in this expression, which you are at liberty to reproduce as a whole or in part, in substance, however, **deploring cut price methods to increase trade,** thereby surely sacrificing service and often quality to the motorist. Price cutting expresses an envious, jealous nature and generally an unsafe business.

My experience is covered by a period of ten years active service with manufacturers, as well as wholesaling and retailing automobile accessories.

Yours very truly,
The Manufacturers Rubber & Supply Co.,
H. N. Culbertson,
Pres. and Gen. Mgr.

Use Backbone Instead, Advises Shaler

Incorporates Advice in Sales Lesson for Distribution Through Trade

Waupun, Wis.

Motor World, Gentlemen:

We note with interest the debate on price cutting appearing in the last two or three issues of Motor World.

Possibly the following, which is one of a series of lessons in selling which we furnish to salesmen of our auto supply distributers upon request, will be of interest in this connection.

Yours very truly,
C. A. Shaler Co.

Price-Cutting vs. Salesmanship

"Men who are worthy of the name, salesman, in every particular—hard workers—men who make a good presentation—who show their goods to the best advantage and hold the attention up to the close, often, very often, seem to lose their nerve entirely just at the critical moment, i. e., when they come to the question of price.

"They seem to fear the buyer at this stage of a transaction and you can just bet the buyer is quick to notice and quicker to take advantage of it.

"Stick by your price and if it is a legitimate one you'll get it. If it isn't, you'll soon find it out by the prices other houses are quoting on the same goods. Then is the time to take it up with the sales manager. But remember that you can't be lower than, or as low as, every other house on every line you handle. Every concern has some leaders.

"When it comes to standard, trade-marked goods, like Weed Chains, Klaxon Horns, Shaler Vulcanizers, etc., on which the manufacturer has set a legitimate re-sale price that is fair to all, don't let yourself be bluffed.

"You may hear of firms cutting on such articles; you may see them listed at cut rates in the catalogs even of the regular cut-rate mail-order houses. But remember that they are there as foolers—primarily to fool customers into thinking that because standard goods are shown at a cut, the unknown articles that go to make up 90 per cent of the goods shown in those catalogs are equally as low priced in proportion. Don't let them fool you. Those concerns can't buy standard goods if they sell them at a cut, or even if they offer them for sale by cataloging them at a cut price.

"Just recently the Supreme Court has decided that a manufacturer cannot collect damages from a firm that cuts on goods like Shaler Vulcanizers, which are marketed under a re-sale license, but they can't make us sell to such concerns. And right now there is before Congress House of Representatives Bill No. 13,305, introduced by Mr. Stevens, of New Hampshire, which seems very likely to be passed, and which will make such price-cutting illegal and the cutter liable for heavy damages."

DEEP CUTTING WILL AROUSE SUSPICIONS

"We believe in department store bargain methods in the accessory and supply business most decidedly, provided these methods are tempered and adjusted to suit the supply business," says W. R. Wheeler, manager of the Motor Shop, Indianapolis.

"Department stores have the advantage, inasmuch as that not so many of their articles have a definite advertised price. Therefore they can put on their bargain sales and still make a reasonable profit.

"We believe that it helps us, and harms no one, when selling at retail, to cut prices a little, as it makes things more attractive.

"We do not believe that it gets anybody anything to sell something as a leader below cost in the hope that people will come into the store and buy something else. It is more apt to draw a more or less undesirable class of bargain hunters.

"We believe in reasonable prices, with plenty of advertising, and quick and efficient service at all times.

"Instead of cutting prices ridiculously low it is better, we believe, to put a little extra money in advertising, mailing lists, etc. The mere deep cutting of prices engenders a feeling of distrust that the goods are right to start with and sets a lower standard of prices which will make less money for us, and also the trade in general.

"We want our trade to feel that they can buy as cheaply from us as anyone, and that we are reliable and can be depended upon. We don't want them to simply 'prey' on us when we sell 'below cost.'"

Never Cut on a Car

"If you sell your cars at list prices every one of your customers is a booster," says Andy Auble, Chalmers dealer in Akron, O., "for he knows he paid as much for the car you sold him as every other man in town. What is more, you will find that your competitors are good boosters for you. There is nothing that hurts a motor car dealer in the trade so much as a reputation for cutting prices.

"In every territory there are enough sales and enough money to keep every legitimate motor car man in business with a good profit to himself. Why not be a successful dealer? You can do it by right organization, and by getting a dollar for every dollar's worth of goods you sell."

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WIDE-AWAKE MERCHANDISING

Tell No Lies in Your Sign

If You Haven't Got It Don't Advertise It – It's Bad

Don't advertise goods you haven't got in stock.

It creates a bad impression—and it does not help anybody.

If you think well enough of the goods to have the name emblazoned on your window you should be prepared to supply them.

There is a dealer in a mid-western city who carries on his window the name of a car that has not been manufactured for years.

There is an accessory dealer in a Michigan town who has a transfer sign taking up valuable space on his window, advertising an article he no longer sells and would not recommend.

There is a car dealer in an Indiana city with a big red, green and white transparency on his window advertising the name of a certain car. It, the sign, has been there for two years. And the dealer has never owned or sold more than one car of this make—the original demonstrator. He never will—because he does not believe in that car. But he advertises it on four windows—and thus works harm to himself and an injustice to the manufacturer by his sneering answers when the car is inquired about.

A little elbow grease, a little energy, and a little thoughtfulness as to the negative value of such useless signs, will bring them all down to be replaced by live ones.

Good-Will a Business Builder

More business is built through good-will than most men admit. Thus, good-will is a business asset to be developed, cultivated and nourished with great assiduity.

The motor car dealer who builds good-will unceasingly need never fear competition, for he binds his customers with the strongest known cement. Good-will, cultivated, flourishes and is vanadium-like in its toughness; but neglected, it is brittle as glass.

Satisfied customers often represent a more potential business opportunity than a big card index full of prospects' names, for the satisfied customer plugs for you enthusiastically in season and out of season and makes sales for you when you don't know even the name of the possible buyer. He cannot help boosting if he is really satisfied.

That is why most of the big, successful dealers are swift to investigate and settle the slightest complaint; slow to neglect or forget even the lowest rumble of dissatisfaction.

Are all your customers satisfied customers? If you know of any who are not, act swiftly; investigate and apply the proper remedy.

HERE IS QUARTET OF SELLING RULES

Just a Little System That Can Do Much for Any Retailer

Here are four rules of salesmanship. Paste them up:

1. Always meet a customer more than half way when he comes in your store. Do not wait for him to walk to you.

2. If every one is busy when a customer comes in let the nearest man to him speak and say that some one will wait on him in just a minute. A customer will wait three times as long after being recognized as he would if allowed to stand unnoticed.

3. Never let customers leave your store without thanking them for the purchases that they have made and asking them to call again. This habit is easily acquired and is worth money.

4. When a customer asks for some article try to think of the articles which are used in connection with such goods and suggest these articles as soon as the first sale has been made.

Took Shadow From Window

Regal Detroit Dealer Got Effect by Ingenious Move

The Regal Motor Sales Co., Detroit, had an artistically planned salesroom and a large window, but for some inexplicable reason, no matter how much electricity they consumed, they could not overcome the deep shadows and reflections in the glass, and their displays, no matter how well planned, always failed of the result desired.

Many kinds of electric lighting effect were tried without any appreciable gain.

Some large trees in front of the store helped to intensify the shadows, but they also gave shade, and there seemed no valid reason to justify the city in removing them.

Finally experts were called in and a solution was arrived at.

The woodwork, which had been finished in dark Flemish oak, was heavily enameled in pure white. The ceilings and walls were likewise white enameled. The effect is astonishingly good.

The black finish of the cars stands out against the pure white of woodwork and walls and furnishes the strongest possible contrast.

In daylight the displays show up clearly and strongly, while at night, with the lights burning, they now have one of the most attractive and compelling windows in Detroit's automobile row.

There are many dealers with dark, impenetrable windows who can benefit from this experience of the Regal Motor Sales Co.

On pages 26 and 27 of this issue of Motor World you will find a discussion on bargain methods in accessory selling. Let us have your opinion on this question.

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Put Punch in Selling Visits

Don't Let Weeks Elapse Between Calls—Be Aggressive

If you call on a prospect and cannot make a sale the same day, follow it up. And follow it up soon!

Too many sales die "in the borning."

Go over the sales you failed to make! It will take you only a few minutes to realize the truth of what is said here, for every salesman knows that there is an incredibly large number of sales that he might have closed if he had only followed them up closely.

The prospect may be aroused to intense desire on your first visit. But, for some perfectly logical reason, he may not be able to buy just then.

Allow three or four weeks to elapse before your next call and the effect of your first visit has passed away. You have to begin to sell the prospect all over again. This time you may lack the "punch" or he may not be receptive, and the current of enthusiasm you send out may fall just a little bit short of melting the solder of indifference. No union of purposes is effected.

Again some other salesman may have come in during the interim and created just as good an impression for his car.

Thus the work is more than twice as hard.

Whereas, if your second visit had come close on top of your first, with your mind freshly stored with answers to all his objections—and a clear, vivid recollection of the previous conversation—immediate victory might have been yours.

Your own enthusiasm diminishes as the distance between your visits increases. So why put it off? Why not follow up to a finish? That's the way to win. That's the only sure way to "bring home the bacon."

Economy Means "Get Full Value"

Economy does not mean to stop spending. It does mean getting every last ounce of efficiency from every dollar spent. It means cutting out the pie when you have had a full meal of meat and potatoes.

Some men eat pie just because they have grown accustomed to it. They do not need it and would be better off without it. It is the same way in business. There are lots of "waste places"—so to speak—that might best be trimmed off. That is economy. That is efficiency. That is the elimination of waste.

What drains are there in your business that ought to be blocked? What leaks that should be stopped? Where are you spending money inefficiently? What have you got that is not producing? Be it men, material or machinery, it must stand the test.

True economy may even mean spending money. The manufacturer frequently economizes by throwing out old machinery and replacing it with more expensive but more efficient machines. It may mean paying a better salesman more money because he is a larger producer and easily worth it. It may mean spending money in advertising that you may make more sales, getting back your investment in the larger profits. But always it means seeking the utmost intrinsic value for your money.

GO AFTER THE NEAR PROSPECT, NOT "FAR"

Time Lost by Neglecting Man Who Is Most Likely to Close

"Why it should be so I do not know, but there is real need for every dealer to impress upon his salesmen the desirability of concentration on real prospects instead of working on near-prospects," said a well-known dealer.

There is little doubt but that that is the trouble with the work of salesmen in many lines, but it is particularly the sort of error into which a salesman having so many possible prospects as the average car salesman is likely to fall.

The near-prospects are valuable, of course. But it is the **real** prospects—the fellows who have actually made up their minds to buy a car and have the funds to carry out their desires—that will immediately repay the work spent upon them. And what the salesman wants, and what the dealer wants, is not **glory**, but a big bankroll made fat through many sales.

Let the near-prospects slide. Land the real ones. **Concentrate** on them. Think over every point that would have a bearing on the case and build your selling talk around these points.

Many who work hard wonder why they don't get greater results. It is because they don't make their efforts count.

They try to cover territory rather than to close orders.

Undiscovered Field of Sales

Enclosed Cars and Time Sales, Says Levy of Chicago

James Levy, president of the Chalmers Motor Co. of Illinois, in a talk at the recent Chalmers dealers' convention, pointed out three ways in which a great many dealers are overlooking possibilities for increased business.

"The first of these," said Mr. Levy, "is the enclosed car trade. I really think this is one of the easiest lines we have to sell in the automobile business. I find that in the enclosed car trade we have less competition than in the open car trade.

"The second phase of the business which is neglected by a great many dealers is the handling of used cars. I think the second-hand business is one of the biggest branches of our business in Chicago. Generally second-hand sales have been neglected.

"The other end of the business which is sadly neglected is the time sale business.

"Up to this time the great majority of cars have been sold for cash. But as more and more money is tied up in motor cars, as the market more nearly approaches the point of saturation, it is evident that the dealer who can sell cars on time is the one who is going to get the lion's share of the business. I firmly believe that everybody will be doing it later on."

Creative Responsibility Necessary

Walter Dill Scott, who is, by the way, a practical psychologist, filling the chair of psychology at Northwestern University, Evanston, Ill., says the young man of today cannot succeed unless he has as a motive "creative responsibility."

Prof. Scott bases his statement upon the present methods of education, which he analyzes in detail. "Put responsibility upon the man the first day he starts," says Scott. "If he is any good he will shoulder it and if he is no good he will show it."

To be successful with your employes you should study the motives that animate them. Naturally it follows that the salesman who understands and analyzes the motives that govern his customers will be best able to shape his selling talk along the line of least resistance.

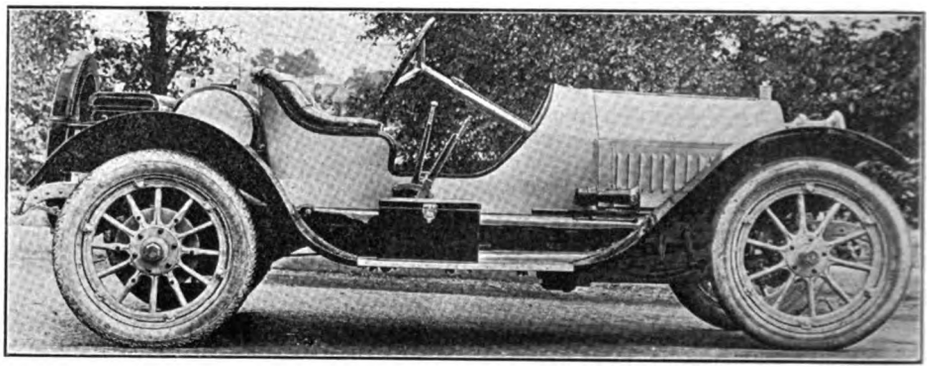
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Stutz Adds Light Four Speedster at $1,475

First Stutz to Have Block Motor With L Head.

Four or Six Cylinders in 4-passenger Speedster.

Ten Models Offered, of Open and Enclosed Tyes.



The H. C. S. is the latest Stutz and the only one to have block-cast L-head motor. It is built only as a two-passenger speedster

By adding to its line a small four that is entirely new, and by putting a new body on the Bearcat chassis, the Stutz Motor Car Co., Indianapolis, Ind., has brought the number of models in its line to ten. The new four is called the H. C. S. and sells for $1,475, and not for $1,450, as inadvertently was stated in a previous issue. It is built only as a speedster for two passengers and has no top or windshield. The other new model is the Bulldog and also is a speedster and lightly equipped, but carries four passengers; its price is $2,250. In reality it is a Bearcat with a four-passenger body; but unlike the Bearcat, it is built only with a four-cylinder motor, the other being built with either four or six.

Apart from the fact that it has an L-head motor the new small four is thoroughly Stutz in its design; it is the first departure of the company from the T-head type, which is adhered to in other models. The cylinders are block cast, instead of in pairs, as is the case with other Stutz fours. The use of a block motor has helped in making a short chassis, the wheelbase being 108 inches, 12 inches shorter than the Bearcat. The short chassis also has caused the adoption of a new connection for the forward end of the torque tube. Instead of carrying the fork on a cross frame it is connected to a plate bolted to the rear end of the clutch housing.

With the two new models the purchaser has a choice of ten cars. These are mounted on three chassis lengths of 108, 120 and 130 inches.

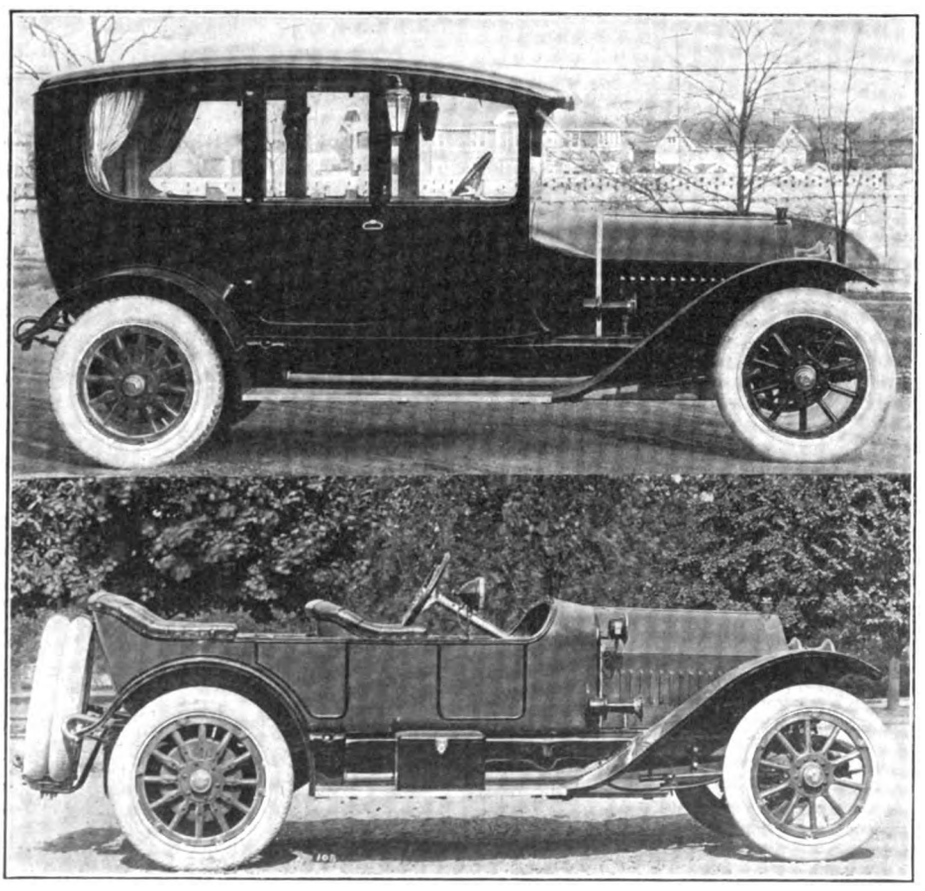
Like all the other Stutz cars the small four is equipped with a Wisconsin motor. In this instance a block-cast unit power plant with L-head cylinders marks a change. The valves are on the left, covered by two removable plates held in place by knob screws.

The new engine differs from previous motors used by the Stutz company in that it is a high-speed type of fairly high stroke-bore ratio. The bore is 3¼ inches and the stroke 5, giving a stroke bore ratio of 1.33. The casting is exceptionally compact, including the water intake manifold and the inlet as a unit. The gases entering the cylinder are preheated both by the water and by heat radiated through the walls of the casting. The exhaust manifold is cast separately.

The cooling system is thermo-syphon, whereas on all the other Stutz cars the water is pump-circulated. On the H. C. S. engine the water outlet manifold and the jackets are amply large to give free flow.

Oiling is by force feed. Oil is pumped from the reservoir in the base of the engine through the hollow crankshaft directly to each of the crank bearings, and is thrown off onto the cylinders in a spray.

In the electric equipment of the car another change has been made. Instead of the combined starting and lighting unit with a separate magneto for ignition, the two-unit idea has been kept and a combined unit used for lighting and ignition with a separate starting

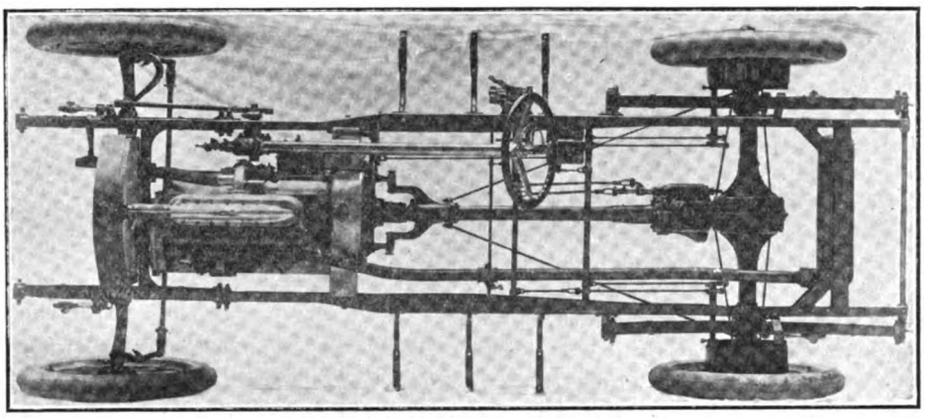


The sedan has 130-inch wheelbase and four or six-cylinder motor. Four passengers are carried by the Bulldog speedster, which has 120-inch wheelbase and four cylinders

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motor. The starting and lighting equipment is the Remy, as in the past. The lighting-ignition generator is on the left side of the engine and the starting motor at the rear right side, its pinion meshing with a gear on the flywheel only when starting the engine. The starting motor is series wound and will spin the engine under normal conditions at 100 revolutitons per minute.

As the H. C. S. is only built as a speedster with a large cylindrical tank just behind the seat, gravity gasolene feed is employed. The carburetter is the Stromberg G, 1-inch size, with hot air intake.



The chassis of the H. C. S. is the shortest in the line, having a wheelbase of 108 inches. The torque tube yoke is trunnioned on the rear end of the clutch housing

ESSENTIAL CHARACTERISTICS OF THE LATEST STUTZ MODELS

Price:	Four cylinders	Six cylinders
Bulldog 4-passenger, 120 wheelbase only	$2,250	....
Touring, 130 wheelbase only	2,275	$2,400
Bearcat, 120 wheelbase only	2,000	2,125
Roadster, 120 wheelbase only	2,000	2,125
*Sedan, 120 wheelbase only	3.675	3,800
H. C. S. Speedster $1,475	....	....
Make of motor Wisconsin	Wisconsin	Wisconsin
Number of cylinders Four	Four	Six
Shape L-head	T-head	T-head
How cast Block	Pairs	Threes
Bore 3¾	4¾	4
Stroke 5	5½	5
S. A. E. rating 22.5	22.5	38.4
Ignition Remy	Bosch	Eisemann
Starting-lighting Remy	Remy	Remy
Clutch Cone	Cone	Cone
Gearset 3-speed	3-speed	3-speed
Whe.elbase 108	....	....
Tires 32 x 4	34 x 4	....
Steering and control Right	Right	Right
Type rear axle Three-quarters floating	Three-quarters floating	Three-quarters floating

Equipment: Speed models, irons for top, speedometer, shock absorbers and tools. Touring models, top, curtains, windshield, speedometer, jack, pump, tools, etc.

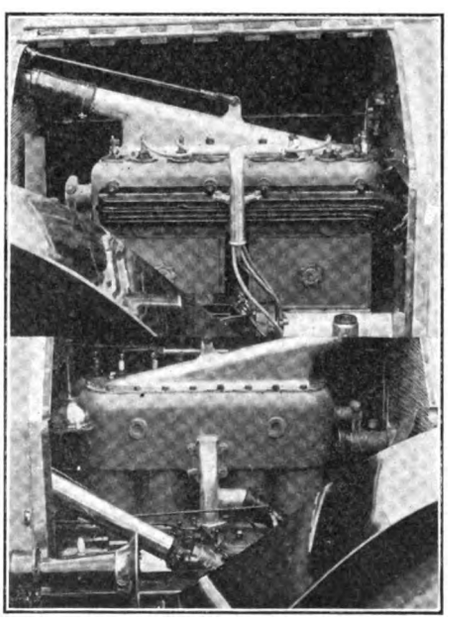
Options: Finish on H. C. S., monitor gray, azure or Mercedes red. Bearcat and roadster, gray, Mercedes red, vermilion or yellow. Bulldog, gray, azure or red. Touring, ultramarine blue or maroon. Sedan, ultramarine blue or Brewster green.

*Both sedan models have 34 x 5 tires.

A leather-faced cone clutch with spring inserts beneath the leather is employed. The clutch and brake pedals have adjustments for length to suit the driver, the maximum variation being 2.5 inches. Behind the clutch housing is bolted the face plate, which takes the forked end of the torque tube.

The rear system is the same as that which has formed a part of Stutz cars ever since they were introduced. The three-speed gearset is just forward of the differential housing, bolted to the torsion tube, which encloses the drive shaft. The forward end of the drive shaft runs on roller bearings. F. & S. annular bearings are used throughout the gearbox and on the outer ends of the axle shafts. The inner ends are on taper roller bearings capable of taking the thrust as well as the radial load.

The steering gear used in the H. C. S is a Gemmer and in this particular the new car is similar to the older ones. Following Stutz practice the steering gear and control are on the right. The brakes are double internal expanding operating on a drum bolted to the rear wheels. Tires are 32 x 4 all around, and wheels are wood on the stock cars. The springs are semi-elliptic all around.



Both sides of the H. C. S. motor are notably clear. The cylinders are 3¾ x 5

The body of the new car resembles the Bearcat very closely, being built along racing lines; but instead of having the seat directly on the frame as in the Bearcat it is raised slightly above and there is a small sill which is a continuation of the downward sweep of the deep cowl. Although the body is ironed for a top, none is fitted, as the car is not intended to be used for touring but as a speedy raceabout. If desired, however, top and windshield can be fitted. The tank is on the rear deck and a trunk is fitted behind it. The spare tire is carried on the rear. Shock absorbers and speedometer are regular equipment.

The four-cylinder motor for the cars on the 120- and 130-inch chassis is a T-head design with 4¾ x 5½ cylinders in pairs. The makers claim a horsepower of over 60 on the block at 1,500 revolutions per minute. The cylinders are offset ¾ inch.

The crankshaft is carried on three main bearings. The push rods are roller type and the entire valve action is enclosed by an aluminum housing split in the center.

The six-cylinder motor for the 120- and 130-inch wheelbase cars is of the same general construction as the four-cylinder except that it has a smaller bore and stroke, 4 x 5.

It is also a T-head with cylinders cast in threes, and has the main features of the four, such as hollow crankshaft, force-feed oiling, large valves and four-bolt connecting rods. The valves in the sixes are enclosed by means of aluminum plate in the same manner as in the case of the four-cylinder engines, except that instead of being held by a spring the cover plate is removable by unscrewing a thumb nut.

The crankcases of both the four and

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six are aluminum castings. The upper half of the case supports the main bearings by means of webs cast integrally with the case while the lower half acts as a cover for the working parts of the engine and carries the oil reservoir which, in the case of the four, has a capacity of 7 quarts.

The lighting and starting equipment on the four and six-cylinder motors is similar. Ignition is accomplished on all the fours except the H. C. S. by Bosch high-tension double type Z R magnetos and in the case of the six-cylinder cars the Eisemann dual system is employed. This marks a change, however, from previous practice, as some cars were equipped with low-tension magnetos.

The starting and lighting systems employed on the entire line except the new H. C. S. model as described, are the Remy motor-generator type. In these instruments the winding is such that below a certain speed the action is that of an electric motor, while above that speed they act as a generator. They start charging the battery at a car speed of about 15 miles per hour.

The clutch, gearbox and rear axle used on all these cars are the same in all essential details as those described for the H. C. S. model, the horsepower capacity being of course increased to take care of the greater strains imposed by the heavier and more powerful cars.

The tire sizes of all the cars on the 120-inch wheelbase are 34 x 4 all 120-inch wheelbase cars are 34 x 4 all around. On the 130-inch cars they are 34 x 4 for the touring in both four and six cylinders and 34 x 5 for the sedan. Wire wheels are furnished on these models at an extra cost of $125.

A wide choice of colors is offered. The new H. C. S. comes in Monitor gray, azure, and Mercedes red; the Bearcat in gray, Mercedes red, vermilion and yellow; the roadster the same as the Bearcat; the new Bulldog, battleship gray with red upholstery, azure with black or Mercedes red with red; the touring, ultramarine blue and maroon, and the sedan, ultramarine blue with Brewster green.

Chevrolet Plans 10,000 Production

The Chevrolet Motor Co., Flint, Mich., plans to build at least 10,000 Chevrolet cars for tthe 1915 season. The New York city factory, which will take care of all of the New England states and the export business, is expected to produce at least 3,000 cars. The working force will be greatly increased in both plants and within a short time the Flint plants will be turning out 50 cars a day.

COMING SHOWS INTEREST DEALERS' ASSOCIATIONS

Illinois Organization Urges Garages Lien Law—New York Men to Boost Rates—Safety First Campaign in Maryland

With the approach of the winter months the activities of many of the dealer and other trade associations are confined largely to the promotion of the annual show; in some cities the association of dealers exists for this purpose alone, but often the organization formed with this object has broadened into a full-fledged, trade elevating body.

Among the organizations in the trade are several garage associations which are leaders in activity. One such is the Garage Owners' Association of Illinois, which is working successfully to bring all the garagemen in the state into the organization. Generally speaking, the association works always to elevate the trade and weed out the unreliables, but at this particular time it is working upon a garage lien law which it hopes to have passed at the coming session of the Illinois legislature. This measure gives the garageman and repairman a lien on cars for accounts owed.

This association's president is Robert Bland, Evanston; the secretary is E. J. McGuirk, 510 Monadnock building, Chicago. The treasurer is Charles L. Turner, 2004 Main street, Peoria.

The activity of the Illinois state body seems to be reflected in the Danville Automobile Trade Association, which generally has something on the boards and this month has been busy with a hill climb. The object of this event is to awaken interest and boost the fall business. E. W. Seawright, 124-126 West Main street, Danville, Ill., is secretary.

The New York Garage Association, New York city, is still allied with the other trade organizations in its fight against the gasolene separator ordinance, but its principal work at present is the readjustment of garage storage rates. Rates are considered too low; it is stated that there is no profit in storage and that therefore a high price must be charged for gasolene. It is proposed to raise all storage $5 a month and sell "gas" at a 5-cent profit. Louis J. Joscelyn, 112-26 West 52nd street, is president, and Charles H. Potter, 154 West 124th street, is secretary.

The Dallas Automobile Dealers' Association, Dallas, Tex., is promoting an exhibition, to be held October 15-November 1, on the fair grounds during the annual state fair. There will be no admission to the automobile building, the only fee being the admission fee to the fair. The exhibit is being promoted on an extensive scale.

J. W. Atwood, Buick Automobile Co., is president, and B. M. Lindsley, Southwest KisselKar Branch, secretary-treasurer.

The Boston Automobile Dealers' Association, Inc., of which Chester I. Campbell, 5 Park square, is secretary, plans to meet in October to consider preliminary plans for the annual show which is held in the spring. This is promoted entirely by dealers and is the largest dealers' show in the world.

The Omaha Automobile Show Association, Inc., Omaha, Neb., is, as its name indicates, a show promoting organization; it, however, is considering broadening its scope. It will hold its tenth annual show in the Auditorium, February 15-20. Clarge G. Powell, secretary, is manager of the show. He is gathering data in traffic regulations and the association considers presenting a set of traffic rules which will better street conditions. Omaha is congratulating itself on crop conditions.

The Columbus (O.) Automobile Trade Association, of which the secretary is L. M. Browne, Columbus Buggy Co., will hold a meeting soon to consider the annual show. The Louisville (Ky.) Automobile Dealers' Association will hold its show late in the winter. Prince Wells is president, Ira S. Barnett, vice-president, and P. S. Longest, 725 South 3rd street, secretary-treasurer.

In Asbury Park, N. J., the Sea Shore Automobile Trade Association of New Jersey is not very active at this time as its business is governed largely by the summer resort business, which is now on the wane. C. R. Zacharias is secretary-treasurer. Mark Guy is president.

The Automobile Club of Maryland, which answers for a dealers' association in Baltimore, is in the throes of a Safety First campaign. The club does not determine its show date until November or December. H. M. Luzius, 12 West Mt. Royal avenue, is secretary.

The Toledo Shows Association will hold a show if a suitable building can be secured. The dealers' association in Albany, N. Y., of which Chauncey Hakes, Albany Garage, is president, will stage an annual show. In Ripon, Wis., the Ripon Automobile Club, of which F. W. Kohl is secretary, is occupying itself principally with good roads work.

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In Salesroom and Garage

Edward Faust has opened a garage in arion, Ind. He has the Buick agency r Grant county.

The East Orange Automobile & Maine Co. is erecting a $10,000 brick rage at 494 Central avenue, East range, N. J.

The Owl Auto Repair Co., organized Otto Giesow and Guy J. Killian, has arted in business at 5037 Delmar boulerd, St. Louis, Mo.

The Post Office Garage has been pened at Weatherford, Tex., in the premises previously occupied by the Turner livery stable.

The Reo Sales Co. and the Jeffery Distributing Co. have been organized at Salina, Kan. Earl Hudkins is the manager of both companies.

W. J. Sutcliffe has leased quarters at 711 Pearl street, Sioux City, Ia., which will be the distributing agency for Reo cars for Sioux City and surrounding territory.

Frank H. Raifsnyder and Howard B. Hall have opened a salesroom and garage in the Fisher building, Cresline, O. They have the agency for Buick and Ford cars.

Ira P. Madden and Ralph Atkinson have organized the Capital Motor Car Co. and located at 168 North 4th street, Columbus, O. They have the agency for Reo cars for 12 counties.

A. V. Reopel has purchased the interest of his partner in what was formerly the Bunker & Reopell Co., Springfield, Mass., and will continue the business. He has the Chevrolet agency.

MOTOR CAR AGENCIES RECENTLY ESTABLISHED

ALABAMA

Place	Car	Dealer
rmingham	Dodge	Saunders Motor Car Co.
ıman	Moon	W. H. Utley
bile	Haynes	Motor Machine Co.

ARKANSAS

tle Rock	Cole	W. E. Bell Auto Co.

BRITISH COLUMBIA

ncouver	Franklin	Consolidated Motor Co.

CALIFORNIA

s Angeles	Dodge	Harold L. Arnold
kland	Premier	A. B. Cosby Motor Co.
nta Cruz	Oldsmobile	Hubbs & Brisac
n Francisco	Dodge	H. O. Harrison Co.
n Francisco	Premier	A. B. Cosby Motor Co.

CONNECTICUT

uth Norwalk	Cole	Vaast Bros. Garage

DISTRICT OF COLUMBIA

shington	Hupmobile	Crescent Motor Co.
shington	Haynes	The Briscoe Sales Co.
shington	Briscoe	The Briscoe Sales Co.

FLORIDA

re Oak	Cole	E. F. Dougherty
t. Petersburg	Haynes	Creamer B. Potter

IDAHO

oise	Franklin	Norman Gratz

ILLINOIS

ltoona	Cole	Eleventh Ave. Garage
urora	Haynes	Auto Accessories Co.
hampaign	Cole	J. L. Wiese
hicago	Waverley Electric	Ralph Temple
ssna Park	Glide	Herman Cluver
ecatur	Cole	W. L. Shellabarger & Sons
Ellingham	Cole	Curry Motor Car Co.
reenville	Cole	Auto Supply & Sales Co.
illsboro	Cole	Wiley & Williams Garage
waneeo	Glide	I. M. Lozades
Rockford	Studebaker	G. B. Williamson
Springfield	Haynes	J. Earl Bell
Utica	Glide	W. W. Wylie

INDIANA

Evansville	Cole	R. D. King
Indianapolis	Krit	Krit-Auman Auto Sales Co.
Indianapolis	Dodge	Steinhart-Eckler Auto Co.
Salmen	Cole	C. M. Crim
Winchester	Haynes	H. K. Wright

IOWA

Bonaparte	Haynes	Blackford & Blackford
Des Moines	Wahl	Masebach Auto Co.
Clear Lake	Haynes	H. D. Mason
Northwood	Haynes	S. O. Thompson
Waterloo	Cole	Burd Auto & Supply Co.

KANSAS

Chanute	Franklin	Chanute Auto Co.
Lawrence	Cole	C. E. Varnum

KENTUCKY

Glasgow	Haynes	G. R. Lewis

LOUISIANA

New Orleans	R. C. H.	American Automobile Co.
New Orleans	Apperson	Berlin Auto Co., Inc.

MASSACHUSETTS

Place	Car	Dealer
Boston	R. C. H.	D. Houston
Boston	Lewis	E. A. Gilmore Co.
Boston	Dodge	O. S. Henshaw Co.
Springfield	Oakland	Dunbar Motor Co.

MICHIGAN

Bay City	Franklin	Oakland Auto Co.
Belding	Studebaker	Wise & Goodman
Brown City	Ford	H. C. Stimson
Grand Rapids	Haynes	Adams & Hart
Jackson	R. C. H.	Weber Bros.
St. Joseph	Glide	E. Hofer

MINNESOTA

Minneapolis	Briscoe	Minneapolis Briscoe Motor Sales Co.
Minneapolis	Marmon	Harry J. Mich
Minneapolis	R. C. H.	Choate Auto Co

MISSISSIPPI

Greenville	Cole	H. H. Berry

MISSOURI

Centertown	Maxwell	Stark & Vogel
Chillicothe	Cole	Adams & Sons Grocery Co.
Kansas City	Maxwell	Acton-Parke Auto Co.
Salisbury	Cole	Stamper & Stamper
Springfield	Studebaker	D. B. Asbury
St. Joseph	Cole	Grand Center Motor Car Co.

MONTANA

Lewiston	Apperson	Fergus County Machine Co.

NEBRASKA

Omaha	Hupmobile	Cadillac Co. of Omaha
Seward	Oldsmobile	J. F. Zimmerer

NEVADA

Ely	Franklin	Ely Garage & Supply Co.

NEW JERSEY

Elizabeth	R. C. H.	Franklin Auto Co.

NEW YORK

Newark	Cole	Wallace Motor Car Co.
Buffalo	King	Mutual Motor Car Co.
Buffalo	Briscoe	Monroe Motor Co.
Buffalo	R. C. H.	G. C. Barone
Penn Yan	Haynes	Wagener Bros.

NORTH CAROLINA

Ashboro	Paige	Ashboro Motor Car Co.
Durham	Paige	Snow Motor Car Co.
Franklinton	Paige	Franklinton Garage Co.
Gastonia	Cole	Gastonia Garage Co.
Henderson	Haynes	J. S. Paythress & Son
Hickory	Paige	T. F. Bogle
Mebane	Paige	Mebane Motor Co.
Winston Salem	Paige	Crawford Mill Supply Co.
Yanceyville	Paige	J. A. Massey

NORTH DAKOTA

Bismarck	Haynes	K. Shenkenberg
Oakes	Franklin	E. W. Weston

OHIO

Bucyrus	Haynes	Harry O. Paxton
Columbus	Overland	O. G. Roberts & Co.
Columbus	National	O. G. Roberts & Co.
Columbus	Wagenhals	Snyder-Chaffee Co.
Columbus	Velie	Spring Street Garage Co.
Columbus	Lexington-Howard	F. Mayer
Columbus	Chevrolet	Daniels Motor Car Co.
Columbus	Dodge	Ohio Auto Sales Co.
Columbus	King	Auto Inn & Exchange
Columbus	Ford	Renner Auto Sales Co.
Columbus	Davis	Renner Auto Sales Co.
Columbus	Lozier	Gwinn Sales Co.
Columbus	Pilot	F. E. Jolly
Columbus	Ohio Electric	Electric Auto Sales & Service Co.
Columbus	Marion	Frank P. Corbett
Columbus	Detroiter	Frank P. Corbett
Coshocton	Hupmobile	Geo. J. Bock & Son
Dayton	Apperson	H. H. Barton
Greenville	Westcott	John Lundy
Lima	Dodge	Baxter Bros.
Lima	Oldsmobile	W. E. Rudy
Logan	Studebaker	Studebaker Garage & Sales Co.
McConnellsville	Ford	Morgan County Garage
Newark	Overland	Fred S. Simpson
Thornville	Overland	Thornville Garage

OKLAHOMA

Bigheart	Haynes	Bryant & Truitt
Dewey	Cole	L. E. Chanks

PENNSYLVANIA

Beaumont	Dodge	Crew Bros
Beaver	Haynes	Fort McIntosh Auto Co.
Clearfield	Cole	Wallace Garage
Duquesne	Oldsmobile	Old City Hall Garage Co.
Indiana	Haynes	C. H Moore
Johnstown	Dodge	Lincoln Automobile Co.
Lamberton	Haynes	Hill Bros
Philadelphia	R. C. H.	Colonial Motor Co.
Philadelphia	Stevens-Duryea	F. W. Eveland
Tarentum	Haynes	Valley Motor Co.

QUEBEC

Sherbrooke	Reo	R. A. Webster

RHODE ISLAND

Providence	King	Charles L. Bebeau

SOUTH CAROLINA

Columbia	Franklin	Gibbes Machinery Co.

SOUTH DAKOTA

Sisseton	Cole	Staving Bros.

TENNESSEE

Bristol	Oldsmobile	L. C. King

TEXAS

Galveston	Dodge	Galveston Motor Car Co.

UTAH

Ogden	Buick	Wotherspoon & Jost

WEST VIRGINIA

Parkersburg	Cole	O. D. Strader

WISCONSIN

Beloit	Briscoe	James W. Neuhall Auto Co
Bonduel	Briscoe	Adolf Ulmer
Coleman	Briscoe	Motor Car Co
Dodgeville	Briscoe	E. C. Miller & Son
Grafton	Briscoe	Lansing Garage
Madison	Cole	R. A Warner
Marinette	Cole	United Car Sales Co
Milwaukee	Briscoe	Milwaukee Auto Sales Co
Oshkosh	Briscoe	H Hanley
Pardeeville	Briscoe	Royce Carpenter
Wausau	Cole	Wausau Garage
Viroqua	Briscoe	Zitzner & Fortney

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Advanced Maintenance

REPAIRING DAMAGED FENDER IRONS

By George Fernwell

Further aid to ascertaining the alignment of the fender while attached to the chassis may be outlined as a check on the results of working by eye alone. Assuming the selected fender to be still attached to the chassis, proceed as follows:

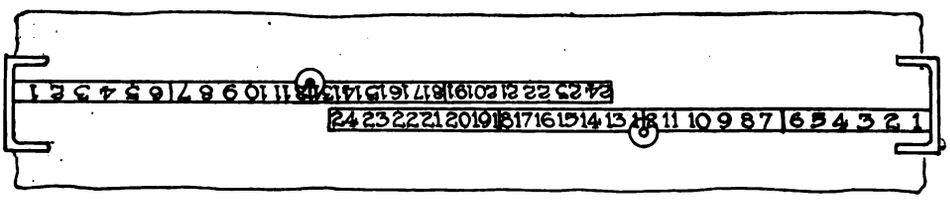


Fig. 1—The frame width is ascertained by using two rules, as shown, and adding the thickness of the frame webs

Measure the width of the wider part of chassis frame at any convenient point

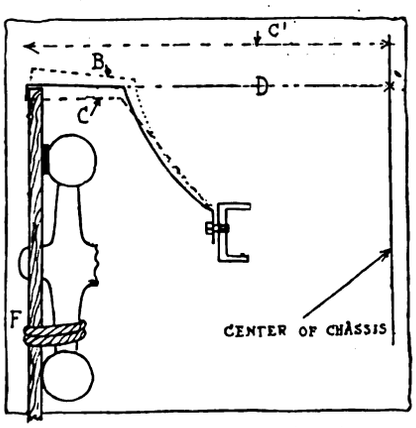


Fig. 2—Temporary prop cut to length to support fender at such a height that it lines up properly

above the runningboard. This may be somewhat difficult should the body not have been removed from the chassis, although a convenient and simple method is shown in Fig. 1 which only requires the removal of the floor boards and the use of two rules.

As illustrated, the graduations on the respective rules which coincide indicate the distance from center of chassis to inner face of the frame channel. To this dimension must be added the thickness of the perpendicular channel wall to obtain the dimension A, Fig. 3, from the center of the chassis to the outside of face of frame.

Next measure the distance indicated by B, Fig. 3, horizontally from the face of the frame to the edge of the runningboard, using a square or a template as suggested in previous discussions of runningboard bracket repairs.

By adding the dimensions A and B, Fig. 3, the distance C can readily be obtained; that is, the distance from the center of chassis to the outer edge of the runningboard.

It is this dimension, C, Fig. 3, to which the attached fender (minus fender iron) must be made to coincide at its outer edge as at C 1, Fig. 3, when the fender is held or braced in a horizontal position.

Short Summary of Operations

As referred to before, the fender may be so springy as to require support and bracing, as is shown in Fig. 2. The foregoing method carried out with judgment should serve to locate the fender in its true position, so that the fender irons may be quickly and accurately restored to their normal shape, or offset, by setting them so as to coincide with the measurement thus possible to obtain by the method outlined and illustrated in issues of September 9th and 16th.

A summary may serve to give a clearer understanding of an unavoidably lengthy or rambling description of small details and will also furnish a guide to the preferable sequence of operations in straightening a fender iron. Commence with the heel as described and illustrated in Figs. 2, 3, 4, 5 and 6, September 16th issue, then adjust any distortion of the cross as in Fig. 1, September 16th. Next straighten and set the diagonal member as at Fig. 3 and 4, September 9th, so that the bolt hole D 2, Fig. 4, September 9th, coincides with the normal distance from center of radiator, regardless of the directions in which E, Fig. 3, September 9th, may be pointing. Then set E, Fig. 3, September 9th, until horizontal and conforming with distance C, Fig. 4, September 9th.

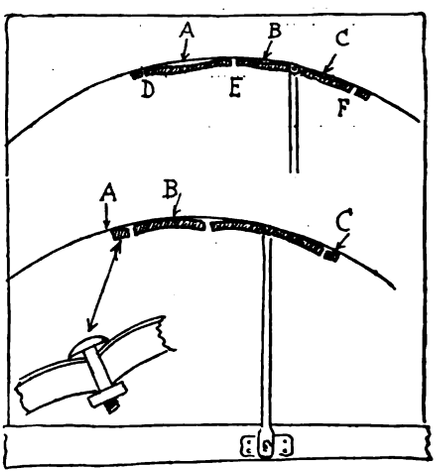


Fig. 4—Exaggerated iron deformation. Upper—Bolt holes D, E and F not affected by hollows A, B and C. Lower—Fender will be pulled out of shape at A, B and C if holes are low

Next set diagonal member until the bolt hole E, Fig. 4, corresponds with the distance E, Fig. 5, September 9th.

These successive stages in the straight-

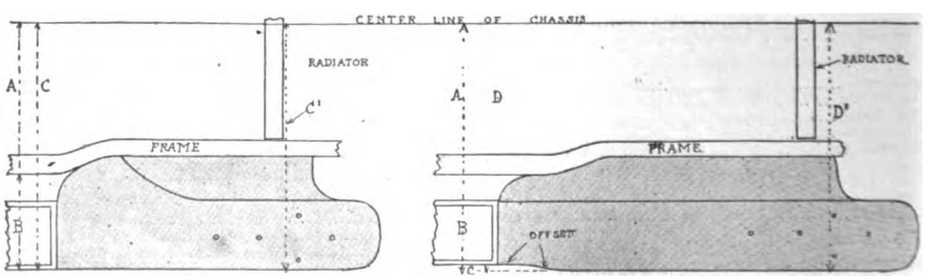


Fig. 3—Measuring fender and chassis for alignment. Left—Touring car fender attached to chassis without irons. Right—Roadster fender also attached without irons

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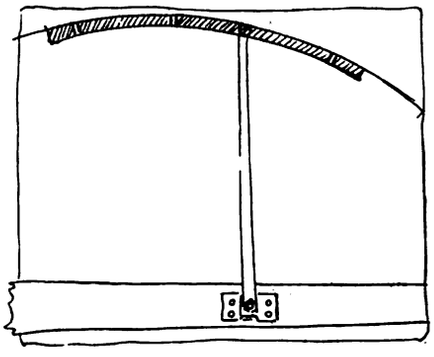


Fig. 5—To fit the fender and the iron should have exactly the same sweep and be in contact throughout the length of the iron

ening process being carried out, there remains but one other, that of resetting the curve of the cross member, Fig. 7.

To carry this out, it will usually be best to clamp the fender iron in its pocket and place the fender over it, inserting one step bolt at the heel.

A great many variations are possible at this stage, but only one example can be considered at present, as in Fig. 7. Here the first thing to attend to is the need of twisting the cross member A, Fig. 7, so that it approximates the direction A. With this done, attention may be given to any point of the iron which in touching the fender holds the latter from contact with the former, as at B, Fig. 7.

Bearing Necessary at Bolt Holes

With an intelligent and capable assistant the cross strap may be curved at the necessary successive points by the judicious use of bending irons.

While it is the better job to curve the strap so as to fit snugly against the fender, as in Fig. 5, the more necessary and specific objective should be that of ensuring that the fender takes a bearing on the fender iron immediately around each fender bolt hole, so that when inserting and tightening bolts for final assembly the fender should not be drawn down into a disfiguring hollow. See Fig. 4.

Notwithstanding the assumed carrying out of all the suggested methods for reshaping the fender irons accurately as possible, it will at the actual fitting of the fender in place be found very rarely that the original bolt holes in the fender will be found to coincide with those in the fender iron. They may possibly sometimes be forced to coincide, but this will usually spoil an otherwise well conducted repair.

Instead, judgment should be exercised to locate the source of such deviation, and with the bending irons and heat, if necessary, make such necessary slight alterations in the set of the fender irons as will make the bolt holes coincide or register without having to forcibly twist or deform the fender.

In finally inserting the fender bolts, caution should be observed in the use of a hammer to drive the bolts home; the result of an injudicious hammer blow is shown in Fig. 8, in which the fit of the fender iron is obviously spoiled by the hammer blow bending the strap.

A hammer is not often necessary, as if the holes are burred or otherwise made too small they can be cleaned out with a small file so that bolt can go home to

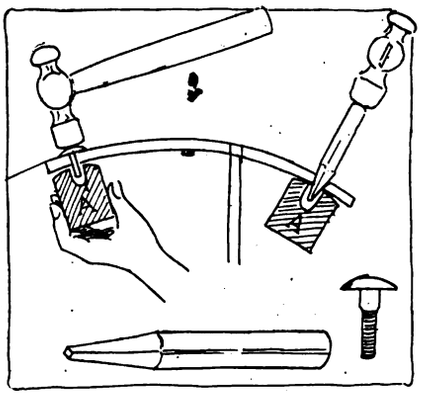


Fig. 6—If bolts must be driven or holes drifted, a heavy iron should be held hard against the under side when the hammer is used

the head without driving and then be pulled to a good fit by the tightening of the nut. If a hammer for any reason must be used, a steel block five or six times the weight of the hammer used should be held under the strap, and not merely held there, but also pushed hard upwards against the hammer blow.

Result of Injudicious Hammering

A similar undesirable effect will result when, as is often done, driving a square pointed punch or drift through

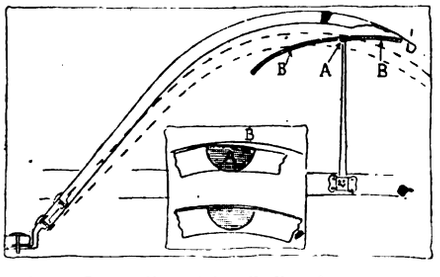


Fig. 7—Iron adjusted in all directions except for giving strap B proper curve and twisting cross member A to correct angle

the fender bolt hole, with the object of quickly forming a square orifice for the reception of the square part of the stem immediately under the head of the fender bolt.

In the case of the type of fender attached to the runningboard by heel

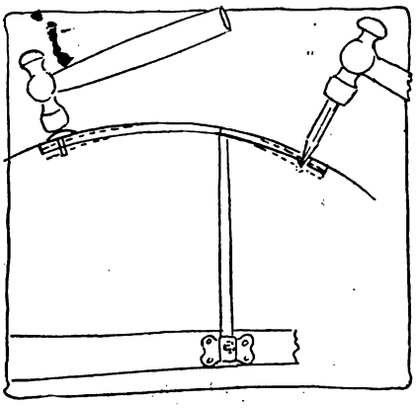


Fig. 8—Result of driving bolt or a drift without an iron under will be to force the iron downward and out of shape

straps, illustrated in Fig. 3, being under the described repair, it is just as necessary to carefully fit the heel strap to the fender as in the case of the fender iron previously described.

That portion of the surface of the fender to which the heel straps are attached is practically flat, and therefore even more easily drawn by the bolt head into a large disfiguring hollow than would be the case at that part of the fender adjacent to the fender iron where the fender's cylindrical form gives the sheet metal some stiffness.

Forestalling Rattling Fenders

In other words, the heel straps should be so bent or set that when one end of the steel strap is pressed upwards against the bottom of the runningboard the diagonal end of the strap should be touching the fender at the point adjacent to each fender bolt hole. Also the heel straps should be examined for twist. The same observations apply to the use of a hammer at the heel strap without proper support.

Fender bolts must either be riveted over the nut or lock washers employed to prevent subsequent loss of the nuts.

A possible cause for subsequent dissatisfaction is the unpleasant rattling of fenders which may have been refitted to the chassis. Before considering the repair finished, therefore, a smart blow of the hand should be given to each refitted fender. The sound produced by this means will indicate if some part of the fender is springy or loose or otherwise not properly attached.

Assuming the repair to have been completed in compliance with all the foregoing suggestions, there remains only the possible repainting of the fender. For this purpose it is better not to remove fender bolts, fender iron and heel straps from the fender, but to remove the fender from the chassis completely assembled and have it painted that way.

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The Week's Incorporations

Swift Current, Sask.—Scientific Tire Filler Co.

Quebec City, Ont.—Safety Tire Co.; capital $1,000,000.

Toronto, Ont.—Canadian Simplex Motors; capital $40,000.

Argenta, Ark.—W. F. Brawley Motor Co.; capital $10,000. Corporators—W. F. Brawley, John D. Staples and W. R. Deen.

Everett, Wash.—Mackey Bros., capital $2,500; to deal in motor cars. Corporators—James Mackey, George Mackey and others.

Detroit, Mich.—Detroit Enclosed Body Co.; capital $10,000. Corporators—Carl A. Zeller, Jr., Gerald Wright and Grover Farnsworth.

Detroit, Mich.—National Motor Appliance Co.; capital $25,000. Corporators—Sidney B. Winn, Nathan H. Jewett and Howard Streeter.

Indianapolis, Ind.—Higgins-Craig Co.; capital $20,000; to deal in motor cars. Corporators—George W. Higgins, J. R. Craig and William R. Higgins.

Wilbur, Wash.—Enterprise Garage Co.; capital $8,000; to operate a garage. Corporators—E. L. Farnsworth, A. Alexander, R. H. Schriber and Bernt Pedersen.

Roanoke, Va.—Overland Roanoke Co.; capital $4,500; to deal in motor cars. Corporators—Gordon Lefebre and F. S. Cooper, both of Roanoke, and others.

Montreal, Que.—Higgins & Lee Motor Supplies; capital $50,000; manufacturers' agents and dealers in motor car supplies. Corporators—R. S. Higgins and others.

Fall River, Mass.—Pocasset Garage & Machine Co.; capital $15,000; to operate a garage. Corporators—Danforth H. Hathaway, Joseph H. Hathaway and John T. Swift.

Fair Haven, Vt.—Vermont Machine & Automobile Co.; capital $5,000; to conduct a general foundry and machine business, etc. Corporators—George W. Draper and others.

Bloomfield, N. J.—Red Line Auto Co.; capital $2,000; to operate a motor transit line. Corporators—J. F. Maxfield, R. W. Ashworth and E. A. Ashworth, all of Bloomfield.

Broken Arrow, Okla.—F. O. B. Automobile Co.; capital $1,000; to deal in motor cars. Corporators—R. R. Hord, H. C. Hunsecker and L. F. Copeland, all of Broken Arrow.

Suffern, N. Y.—Pieper & Blanchard Garage Co.; capital $5,000; to operate a garage. Corporators—Oliver T. Pieper, Clarence Pieper and Howard B. Blanchard, all of Suffern.

Kennewick, Wash.—Kennewick Auto Co.; capital $3,000; to deal in motor cars. Corporators—John A. Penn, William L. Muncey, D. M. Williams, J. E. McKinney and L. H. Marks.

Yonkers, N. Y.—Morris Place Garage Co.; capital $500; to operate a garage. Corporators—Harry J. Haeussler, William H. Haeussler and William Haeussler, all of 45 Post street.

Rochester, N. Y.—United Taxi & Delivery Co.; capital $4,000. Corporators—Julian B. Lewis, 23 Herman street; William Mayerson, 27 Gilmore street; Morris M. Dolits, 16 Herman street.

Ballston Spa, N. Y.—Ballston Spa Garage Co.; capital $20,000; to operate a garage. Corporators—Wilfred Colburn, James B. White and George W. Chamberlain, all of Ballston Spa.

Brooklyn, N. Y.—Brooklyn Tire Co.; capital $10,000; to deal in tires and rubber goods. Corporators—Willard J. Woodcock, Frank W. Woodcock and Beatrice Woodcock, all of 102 Gates avenue.

New York, N. Y.—Briscoe Sales Co.; capital $10,000; to conduct a motor car business. Corporators—Rudolph De Lisser and John Dorr, both of 1794 Broadway; William J. Jackson, 1796 Broadway.

Willoughby, O.—Standard Tire & Rubber Co.; capital $100,000; to manufacture tires and mechanical goods. Corporators—Charles E. Shaw, C. F. Groth, E. A. Williams, J. W. Smith and J. A. Smith.

New York, N. Y.—Drubin Funeral Car Co.; capital $10,000; motor cars for funerals. Corporators—Arthur W. Drubin and Herman Drubin, both of 127 West 26th street; Alexander Schneeweiss, 1914 7th avenue.

New York, N. Y.—The 474 West 130th Street Garage; capital $1,000; to operate a garage. Corporators—George A. Adams, 149 Church street; Bernard Lippam, 456 Washington street; Charles Goldman, 41 Park Row.

Buffalo, N. Y.—Davis-Rae Oil Co.; capital $5,000; to sell oils and other motor car sundries. Corporators—Frank B. Rae, 713 Park avenue, Rochester; Albert H. Davis and Lillian E. Davis, both of 1018 Main street.

Minneapolis, Minn.—Automobile Trail Blazing Association; capital $50,000; to mark and blaze trails through America and sell guide books. Corporators—A. L. Meigs, Ira Farr and L. C. Meigs, all of Minneapolis.

St. Louis, Mo.—Best Service Auto Truck Co.; capital $30,000; to conduct a general motor vehicle business and operate a garage. Corporators—E. H. Abadie, E. E. Scott, Lewis Perry, Robert B. Snow and E. G. Curtis.

Pittsburgh, Pa.—Duquesne Motor Truck Co.; capital $25,000; to manufacture motor vehicles. Corporators—John Sheenan, Braddock; W. G. Putnam, J. H. Conkright, Joseph Zamecrink and W. G. Conkright, all of Pittsburgh.

New York, N. Y.—Sole Distributing Co.; capital $15,000; to conduct a motor car business. Corporators—Nancy Stamm, 1476 Seabury place, Bronx; Lida S. Davies, 590 West 172nd street; Herman P. Lowenstern, 501 East 140th street.

Buffalo, N. Y.—Housel Sales Co.; capital $10,000; to market starters and other motor car accessories. Corporators—William E. Housel, 525 McGee avenue, Rochester; M. C. Burns, 451 Ashland avenue; Olive Cunningham, Wadesboro, N. C.

Changes In Corporate Title.

Rockford, Ill.—Barnes Motor Sales Co. to Williamson Motor Co.

Chicago, Ill.—Kloeber Motor Co. to Exchange Motor Co.

Changes In Capitalization

Detroit, Mich.—Scripps-Booth Co., from $50,000 to $150,000.

Recent Losses by Fire

Syracuse, N. Y.—F. H. Johnson garage; three cars and building destroyed; loss $10,000.

Denver, Colo.—White Motor Co. garage; several cars damaged; estimated loss, $5,000.

Sturgeon Bay, Wis.—Hunt & Machia garage; destroyed; loss, $5,000.

Ayer, Mass.—Murphy Sons Co. garage; building and cars destroyed; loss not stated.

Fenton, Mich.—Fenton Motor Co. plant damaged; estimated loss, $7,000.

Harbor Springs, Mich.—Voorheis Auto Garage; building damaged; loss, $2,500.

Coming Events

* Indicates sanction by A. A. A.

Sept. 26, Memphis, Tenn.—Track meet Tri-State Fair.

Sept. 26, Kalamazoo, Mich.—100-mile track meet Inter-State Fair.*

Sept. 27, Pleaston, Cal.—Track meet Alameda County Fair Association.*

Oct. 2, Trenton, N. J.—Track meet Inter-State Fair.

Oct. 2-3, Oklahoma City, Okla.—Track meet Oklahoma State Fair.

Oct. 3, Fresno, Cal.—Track meet Fresno Agricultural Association.*

Oct. 3-10, Cincinnati, O.—Automobile show, Cincinnati Automobile Dealers' Association.

Oct. 4, St. Louis, Mo.—Automobile show, Automobile Manufacturers' & Dealers' Association.

Oct. 7-17, New York, N. Y.—Electric vehicle show, Grand Central Palace.

Oct. 9, Chicago, Ill.—Speedway, Chicago, Speedway Association.

Oct. 17, Tulsa, Okla.—Track meet, under auspices of J. A. Sloan.

Oct. 17-24, Pittsburgh, Pa.—Automobile show, Auto Dealers' Association, Inc.

Oct. 18-31, Milwaukee, Wis.—Convention, Northwestern Road Congress Auditorium.

Oct. 19, 20, 21, Philadelphia, Pa.—Electric Vehicle Association Convention.

Oct. 19-26, Atlanta, Ga.—American Road Congress of the American Highway Association and the A. A. A.

Oct. 28-31, Milwaukee, Wis.—Convention, Northwestern Road Congress.

Nov. 8-9, El Paso, Tex.—El Paso-Phoenix road race, under auspices of El Paso Automobile Club.

Nov. 8-11, Shreveport, La.—Track racemeet under the auspices of the Shreveport Automobile Club.

Jan. 2-9, New York City—Annual Automobile Show, Grand Central Palace.

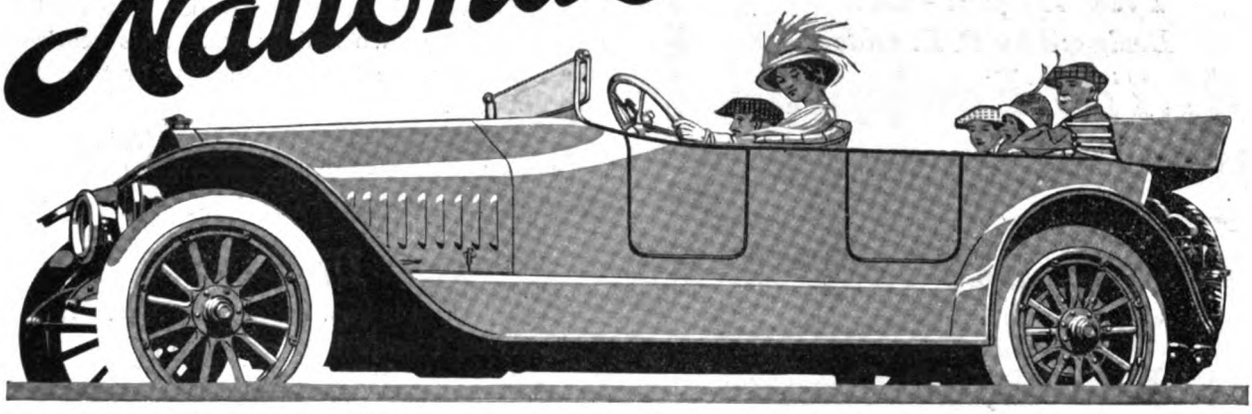
Jan. 23-30, Chicago, Ill.—Automobile Show.

Jan. 30 to Feb. 6, 1915, Minneapolis, Minn.—Automobile show, National Guard Armory.

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No matter where you live, it is decidedly to your advantage for you to investigate this *National.* Visit any *National* distributor or write us direct.

New Book Now Ready—Write

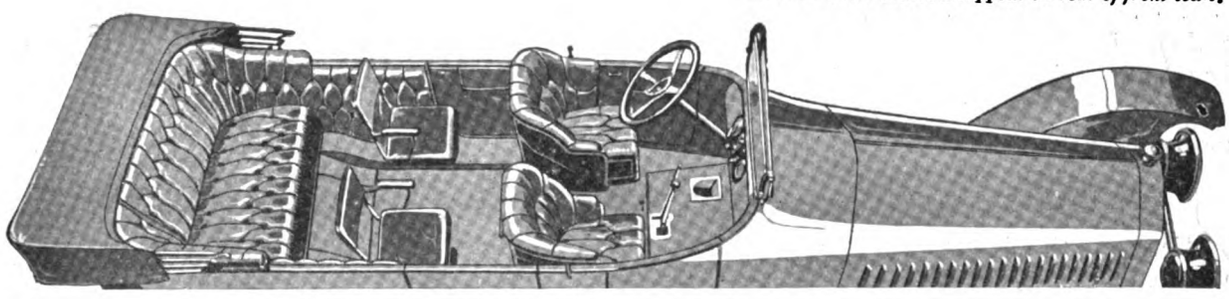
Series AA *Nationals* are made in 2, 4 and 5 passenger bodies at $2375. Six passenger, at $2500. Also furnished with Coupe and Cabriolet bodies.

MOTOR—Six cylinders en bloc 3¾ x 5½, develops more than 55 horsepower and gives fuel efficiency up to 16 miles per gallon. Wheelbase 132 inches, tires 36 x 4½, cantilever springs, electric starter and lights. Equipment complete in every detail.

Immediate Delivery

NATIONAL MOTOR VEHICLE COMPANY, Indianapolis, Indiana

National Six Passenger, with aisle between front seats that are really Turkish Arm Chairs. Extra cushion chairs disappear in rear of front seats.



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Reo the Fifth

The Super-Car

Designed by R. E. Olds

$1,175 Equipped

The Stand-By

With 1,155 Dealers
With 35,000 Owners

Reo the Fifth—designed by R. E. Olds—appeals to men who seek stability.

Both to dealers and to users.

It is built by a wonderful organization. It is built in a factory which has come to be known as the model automobile plant.

It is a better-built car—in a hundred ways—than any rival in its class.

It is for men who buy cars to keep—men who want a super-car, a car that endures and stays new.

It is for dealers who want to build and grow on the firmest sort of foundation.

Its History

Three years ago Mr. R. E. Olds brought out this matchless chassis. He built it to mark the best he knew after 27 years of car building.

He embodied many extremes in it—better, costlier, stronger parts than had ever been known in a car of this class. The factory cost was about $200 higher than if built by other standards.

It was built slowly and carefully. Parts were ground to utter exactness. Then—as now—we spent six weeks on each car.

The price was rather high. The car used to cost, with full equipment, $1,395. By factory efficiency we have since reduced that by $220.

The prophecy was that the car was too good—better than men wanted.

A Million Spent

We spent the first season to announce this car $400,000. More than a million dollars, up to date, have been spent to advertise it.

It was an instant success—overwhelming. The first season's orders swamped us. And that sale has grown and grown. This year's sales will be more than double our first year with this car.

About 35,000 are now on the road. This year we have built, to meet the growing demand, three enormous factory additions.

Kept Up-to-Date

Reo the Fifth is kept right up to date. New body styles, new features and equipment are adopted as fast as developed. Many improvements are made in mid-season. The model just out embodies 18 new features. There is not a handsomer car in its class. Hardly an outward feature of the original model remains in the car of today.

One of the greatest appeals to the average driver is our exclusive one-rod control. Gear shifting is done by a three-inch movement of the hand.

By factory efficiency and standardization we have brought the price down to $1,175. Now no car in this class gives so much for the money.

New Territories

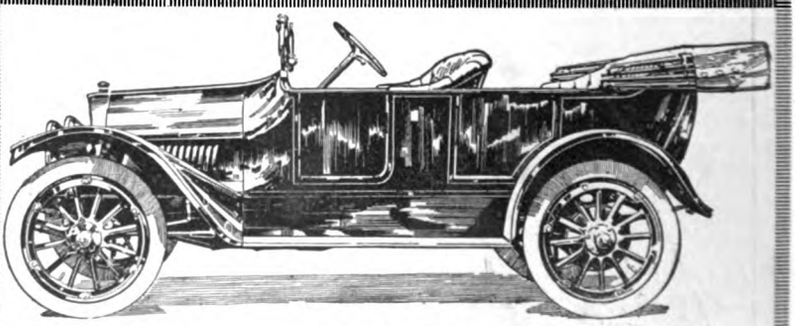
Our present capacity—ninety cars daily—will enable us this year to add a few dealers. We want men who have Reo ideals—who believe that the way to win out in the long run is to give more than others give.

We invite such men to write us.

REO MOTOR CAR COMPANY

Lansing, Michigan

Canadian Factory, St. Catharines, Ont.
Canadian Price, $1500

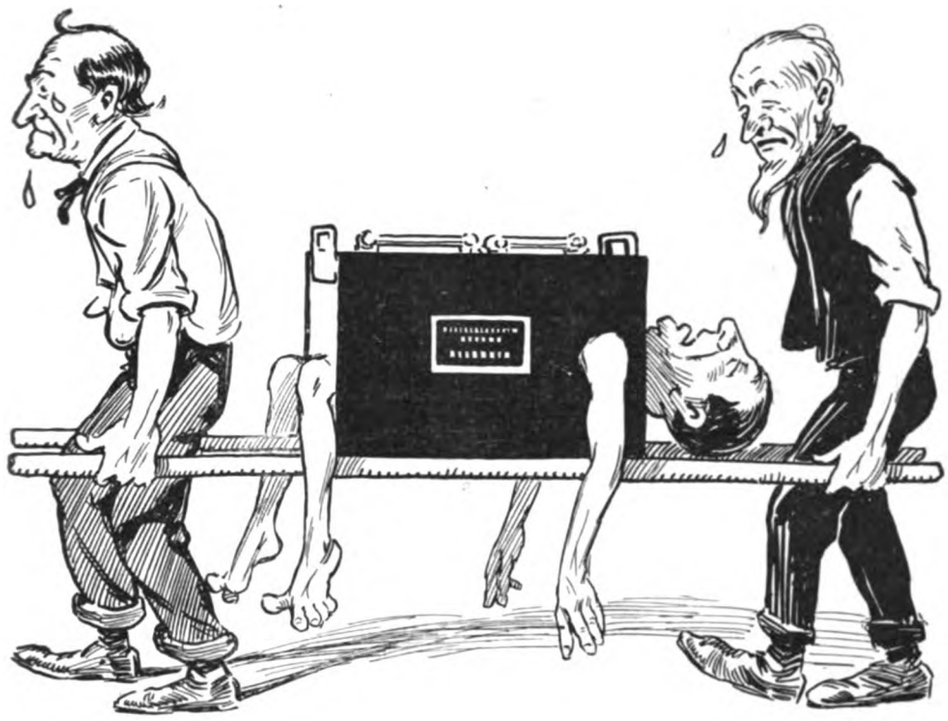


Streamline Body
Electric Lights
Electric Starter
Dimming Searchlights

One-Rod Control
Non-Skid Tires on Rear Wheels
35 Horsepower

Tires 34 x 4
15 Roller Bearings
190 Drop Forgings
Complete Equipment

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A Dead Battery

is a common expression—which is very rarely applied to

It is unnecessary to coddle the **WILLARD** to keep it alive. Reasonable care is enough.

But, if the **WILLARD** does go dead from neglect or misuse, it can always be revived with an extra dose of electric juice.

The **WILLARD** is extremely rugged and durable—as nearly fool-proof and trouble-proof as a Storage Battery can be made.

Add to these qualities wonderful recuperative powers and you will readily understand why an **WILLARD** is so very seldom a "dead battery."

WILLARD STORAGE BATTERY CO.

Cleveland, Ohio

New York Branch: 228-230 West 58th St.
Chicago Branch: 2241 Michigan Ave.
Detroit Branch: 736-740 Woodward Ave.
San Francisco Branch: 821 Monadnock Bldg.
Indianapolis Branch: 318 North Illinois Ave.

SERVICE STATIONS IN ALL PRINCIPAL CITIES IN THE UNITED STATES, CANADA AND MEXICO

117

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You Don't Like Hard Work

The only time you hate your car is when you have to pump up a tire. Every car owner feels the same way. That's why hundreds of them are getting a

Stewart Tire Pump

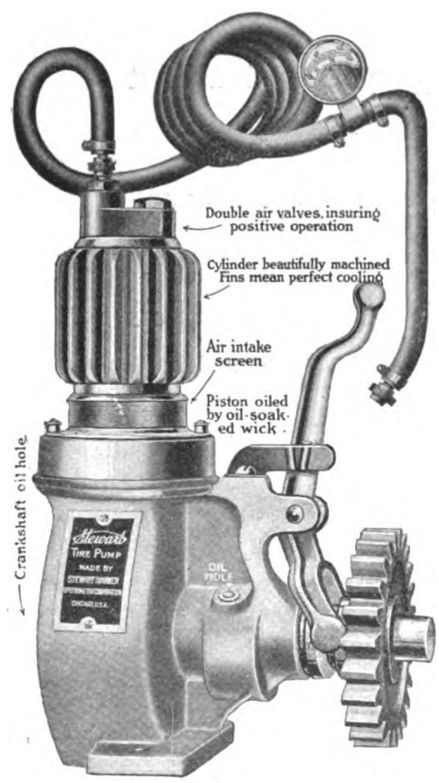
They know that demountable rims and spare tires do not insure against the labor of tire pumping—only put it off. Sooner or later you are bound to be up against the job of pumping a tire on the road, whether you have demountable rims or not.

The Stewart Tire Pump mounted on and operated by your motor, is the one and only way to absolutely guard against all this. It is the best power air pump on the market. The piston and connecting rod are steel—the base aluminum. The cylinder, beautifully finished, has fins for perfect air cooling. No oil can get into tires. No rubber or leather packings to wear and cause leakage. Price with air pressure gauge and 15 feet of high grade hose, complete with bracket and gears to install right on your car, only - - - -

$15

When ordering, give name, year, and model of car the pump is wanted for.

Do away, once and for all, with the hand pump evil. Get a Stewart Tire Pump from your dealer or from us.



The Stewart Tire Pump, with complete fittings for immediate installation, may be had for the following cars (this list is being added to almost daily):—

CAR	MODEL	YEAR
Abbott-Detroit	4-35	1914
Abbott-Detroit	44-50	1914
Abbott-Detroit	6-60	1914
Apperson	4-45	1914
Buick	24 & 25	1913-14-15
Buick	28 & 29	1912
Buick	30 & 31	1913
Buick	36 & 37	1914
Buick	36B & 37B	1914
Buick	Big Six	1915
Burg		1914
Cadillac		1911 12-13-14
Cartercar	5A	1913-14
Cartercar	Seven	1914
Case	35 & 40	1914
Chalmers	6-60-24	1914
Chandler	6-Cyl.	1914-15
Chevrolet	H2 & H4	1914
Cole	4-Cyl.	1913
Cole	Little Six	1914-15
Cole	9-10	1914-15
Cole	Big Six	1914-15
Cunningham	M & R	1914-15
Flanders	4-20	1912
Franklin	6-Cyl.	1914
Ford		All Years
Havers	Six	1913
Haynes	22-23-24	1913
Haynes	27-28	1914
Haynes	32	1915
Henderson	46	1913
Hudson	6-54	1913-14
Hudson	6-40	1914
Imperial	55-6	1914
Imperial	44	1914
Jackson-Olympic		1915

CAR	MODEL	YEAR
Jackson-Sultanic		1914
Jeffrey	4-Cyl.	1914
Lexington-Howard	6-Cyl.	1914
Maxwell	6-50	1914
Maxwell	25	1914
Mercer		1914
Mitchell	Baby Six	1912-13
Oakland	42	1913
Oakland	6-60-24	1913
Oakland	36	1914
Oakland	37	1915
Oakland	6-49	1915
Oldsmobile	6-46	1914-15
Oldsmobile	42	1914-15
Overland	69-71-79	1913-14
Packard	30	1908 to 1912
Packard	3-48	1913
Packard	1-38 & 3-48	1914
Packard	2-38 & 4-48	1915
Paige	36	1914
Pathfinder	All Models	1913-14
Pathfinder	Big Six	1915
Patterson	4-Cyl.	1914
Rambler		1912-13
Reo		1911 to 1914
E. M. F.	4-30	1912
Studebaker	4 & 6 Cyl.	1913-14
Stutz	4-B	1913
Stutz	4-E	1914
Stutz	4-F	1915
Velie	9	1914
Westcott	4-40	1912-13-14
Westcott	6-Cyl.	1913-14-15
Westcott	0-30	1914-15
Auburn	4-40	1914
Maxwell	6-50	1914

Stewart-Warner Speedometer Corporation

Executive Offices: 1958 Diversey Blvd., Chicago. Factories: Chicago & Beloit, Wisc

17 Branches. Service Stations in all cities and large towns.

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ANOTHER of America's Most Famous Motor Cars regularly fitted with –

CHAMPION SPARK PLUGS

"TOLEDO MADE FOR THE WHOLE WORLD'S TRADE"

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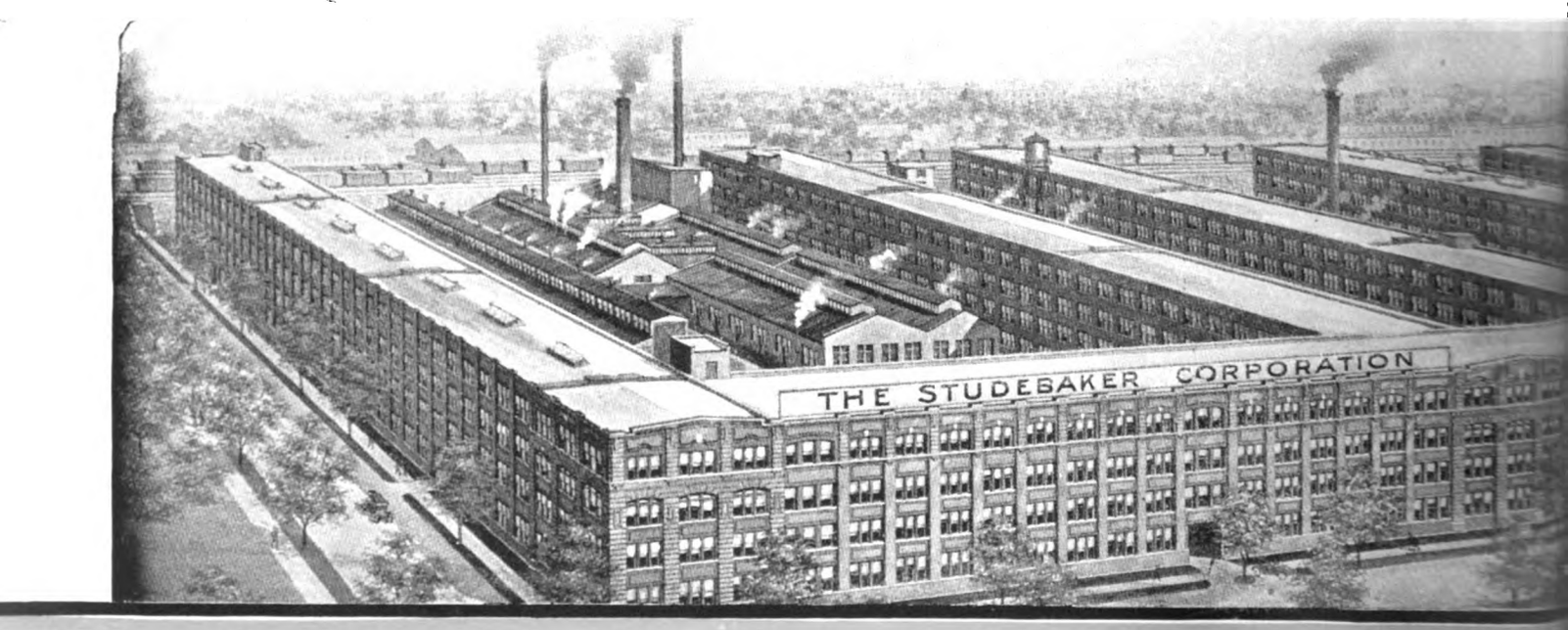
Since the days of prairie schooners, the firm of Studebaker has been making vehicles.

From the beginning, the Studebaker ambition has been to produce by highly organized methods, large quantities of quality vehicles at a moderate price.

They have succeeded—to the vast advantage of their customers. And this same principle has been carried out in the production of Studebaker automobiles.

These splendid motor cars have been made possible only through exceptional manufacturing facilities and the display of remarkable judgment—judgment in designing, in selection of parts and materials, in building and marketing.

Such judgment has chosen CHAMPION SPARK PLUGS as standard equipment for the Studebaker. All Studebaker cars, like most other prominent makes, leave the factory supplied with "CHAMPIONS."



"TOLEDO MADE FOR THE

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Our business stands four-square in the automobile industry.

Fair treatment to the dealer.
Perfect service and prompt shipments to the car builder.
Up to the minute distinctive advertising.
Quality products for the consumer.

"Fair treatment to the dealer" interests you. What are the facts?

You know that we make good spark plugs.

And we want your continued cooperation. Two things make us confident of keeping it.

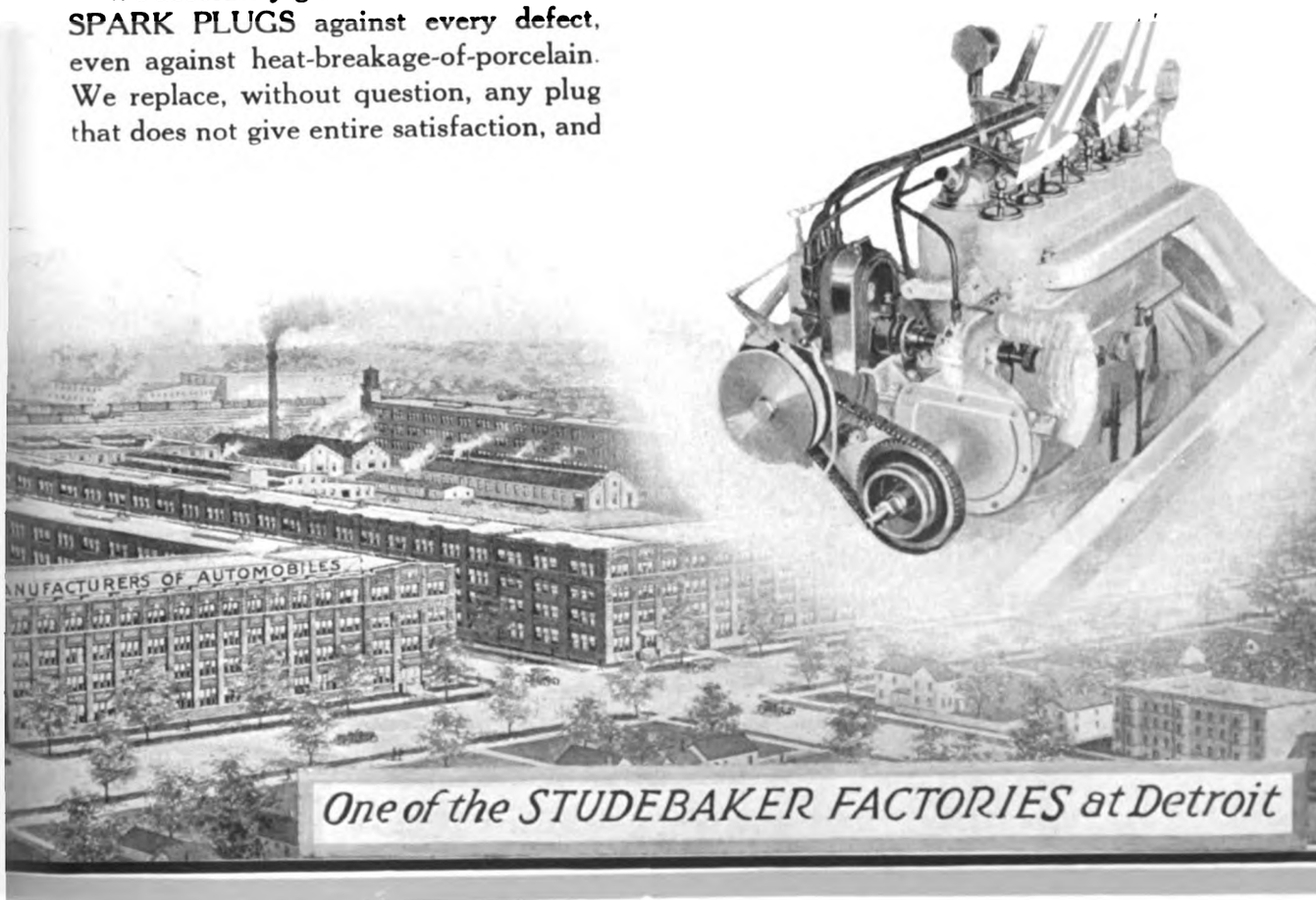
One: The great fact that our guarantee stands like a rock behind every CHAMPION SPARK PLUG that goes over your counter.

We absolutely guarantee CHAMPION SPARK PLUGS against every defect, even against heat-breakage-of-porcelain. We replace, without question, any plug that does not give entire satisfaction, and we leave it to the judgment of the customer.

Two: The great fact of our facilities for quantity production, **insuring** the highest relative quality at a reasonable price.

The demand for CHAMPION SPARK PLUGS is created. Forceful advertising and quality goods have taken care of that. The dealer's profit in the proposition is assured. We have looked out for **that.** Stock CHAMPION PLUGS. They are the "kind that is called for."

Champion Spark Plug Co.
Toledo, Ohio, U. S. A.



One of the STUDEBAKER FACTORIES at Detroit

WHOLE WORLD'S TRADE"

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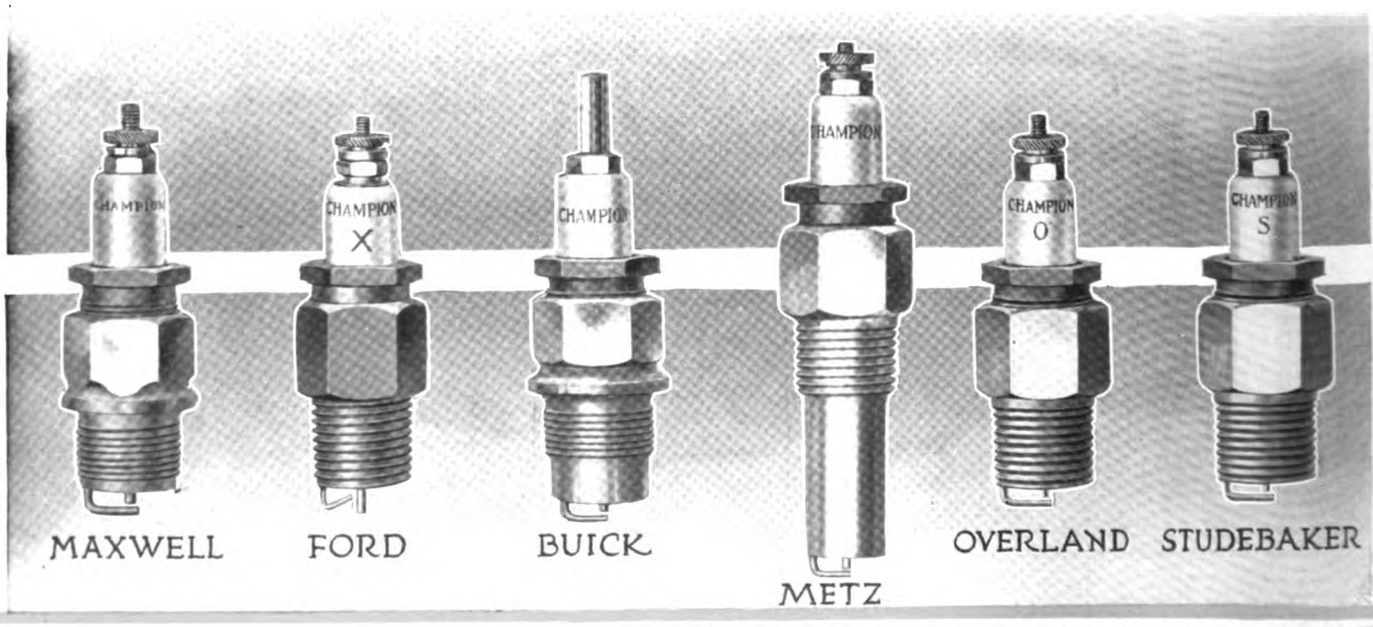
DEALERS

There is only one possible method of placing an accessory on sale in 30,000 dealers' stores. And that is to make an article which gives absolute satisfaction, which has the largest possible demand, and which nets the dealer a material profit.

CHAMPION SPARK PLUGS fill these requirements.

The Champion Spark Plug Company is at this moment making 25,000 spark plugs every working day. This means over 7,500,000 plugs this year, or that more than half of all the spark plugs used throughout the United States are CHAMPIONS. If you are selling spark plugs, but not Champions, you can readily see that you can more than double your sales by adding the CHAMPION line.

If you are interested in the profits accruing from a doubling of your sales, let us know. We have an interesting proposition to get you started on CHAMPIONS. You cannot afford to pass it by. Write now for our special offer.



"TOLEDO MADE FOR THE WHOLE WORLD'S TRADE"

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This Unique Display Board Really Sells Sparton Signals

In accessory stores where this very unique display board has been installed, it has been found to be a quick and ready seller of Sparton signals.

The complete line of Sparton signals is attached and connected to a storage battery—in precisely the same manner as a Sparton is attached to a motor car.

By merely pressing a push button—the customer can hear instantly the warning quality of any signal.

Model numbers are lettered under each horn and by placing Sparton literature alongside of the display board the customer is readily enabled to "sell himself." This display board is made of oak finished in early English and is an ornament as well as an aggressive salesman that works all the time.

Right now there is a golden opportunity for wide-awake accessory dealers to cash in on the huge Sparton national advertising campaign. We are going to tell the story of Sparton warning signals to every motor car owner and every prospective owner in America.

We are going to tell this story so forcibly that every time warning signals are mentioned the term will suggest Sparton. We want to connect up your store and every other accessory store with this great big advertising campaign.

Write us at once for full particulars. Let us tell you how you can use this tremendous sales force in your business and share in the profits that are bound to come to Sparton dealers.

SPARTON PRICES

Model D—Sparton		**$15.00**
" U—	**"**	**14.00**
" B—	**"**	**10.50**
" J—	**"**	**9.00**
" EB—	**" hand operated**	**5.00**



The Sparks-Withington Co.

Jackson, Mich.

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Studebaker

IT is a good thing to be coupled up with a success.

The Studebaker dealer has the advantage, not only of a car of extraordinary quality and character—but of a reputation that has been 62 years in the building.

The Studebaker name is known wherever motor cars are found.

It stands for character and quality—for honesty of purpose—for integrity in manufacturing and selling.

People have learned to accept the Studebaker guarantee of quality at its full face value.

And Studebaker dealers the world over enjoy this public confidence—and profit by it.

The 1915 Studebaker cars at the new prices are probably the most amazing values that have ever been offered in the whole history of the motor car industry.

They offer an opportunity of such remarkable character to Studebaker dealers that applications for territory are being received in unusual numbers.

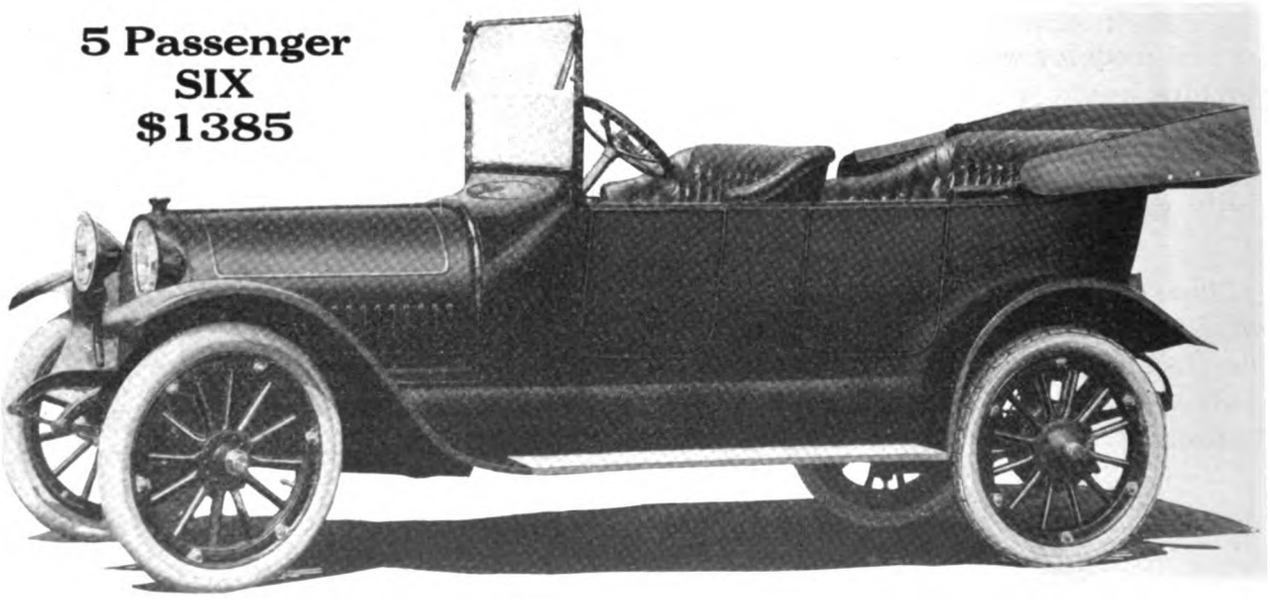
The necessary dividing of some territories makes attractive openings in several districts and responsible dealers who desire a Studebaker connection should get in touch with the sales department immediately.

Prices
F. O. B. Detroit

Four Roadster - -	**$985**
Four Touring Car -	**985**
5 Passenger Six - -	**1385**
7 Passenger Six - -	**1475**

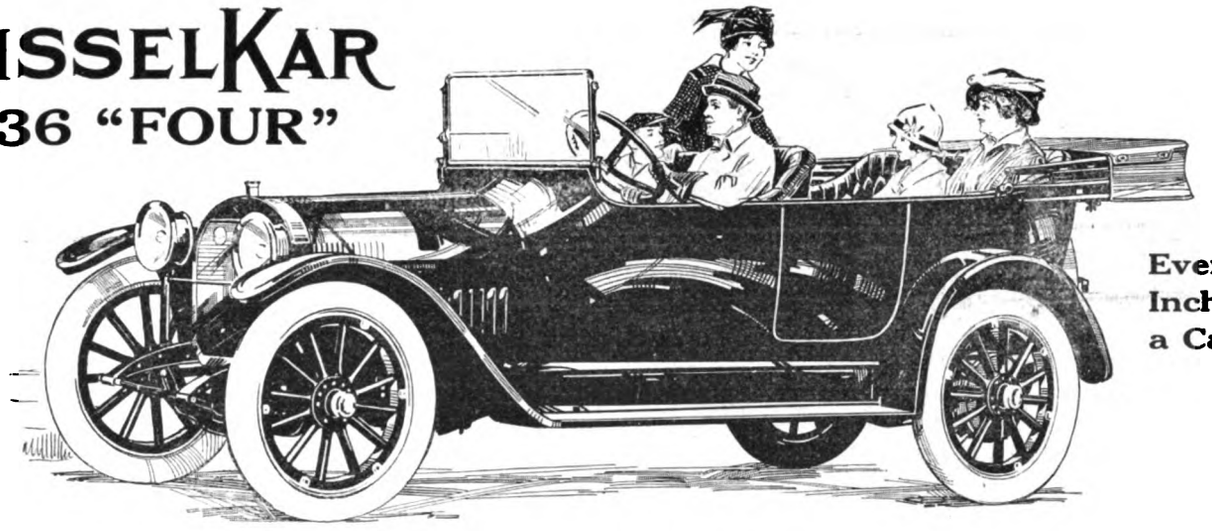
We extend a cordial invitation to all dealers when in Detroit to inspect Studebaker plants.

STUDEBAKER - DETROIT



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KISSELKAR 36 "FOUR"



Every Inch a Car

KisselKar Dealers Will Enjoy a Big Advantage

KISSELKAR dealers are this Fall and Winter going to reap great profits on the ALL-YEAR car, a combination of the Kissel Two-Door Touring Body and Detachable Sedan Top.

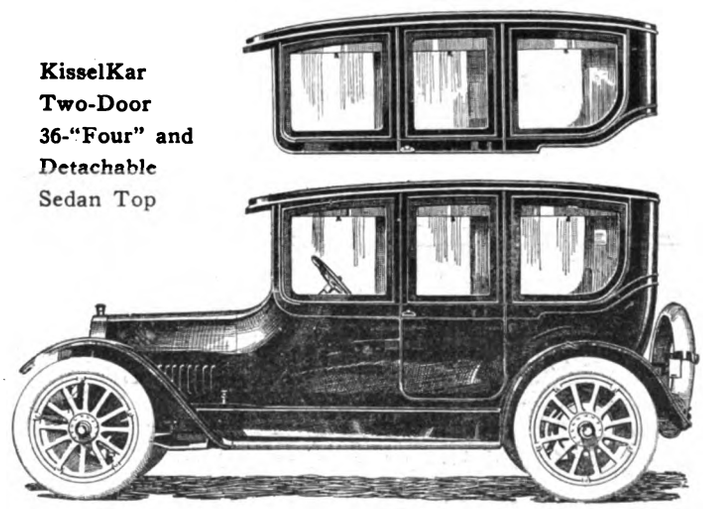
This combination can be delivered NOW with Top attached—a beautiful and luxurious closed coach for winter driving.

In the Spring, the top may be removed by the owner without expert assistance, revealing the smartest touring car on the market for summer use, the KisselKar two-door, single compartment tonneau with individual forward seats.

Sounds immense, doesn't it?

And the new models are, regardless of innovations, architecturally and mechanically, wonderful values. Both the 36-"Four" at $1450 and the 48-"Six" at $2350 measure up in solid worth with cars of much higher price.

Can you doubt for a moment the advantage of handling the new KisselKar models with the Two-Door Body and Detachable Sedan Top – with the conventional Four-Door Body optional?



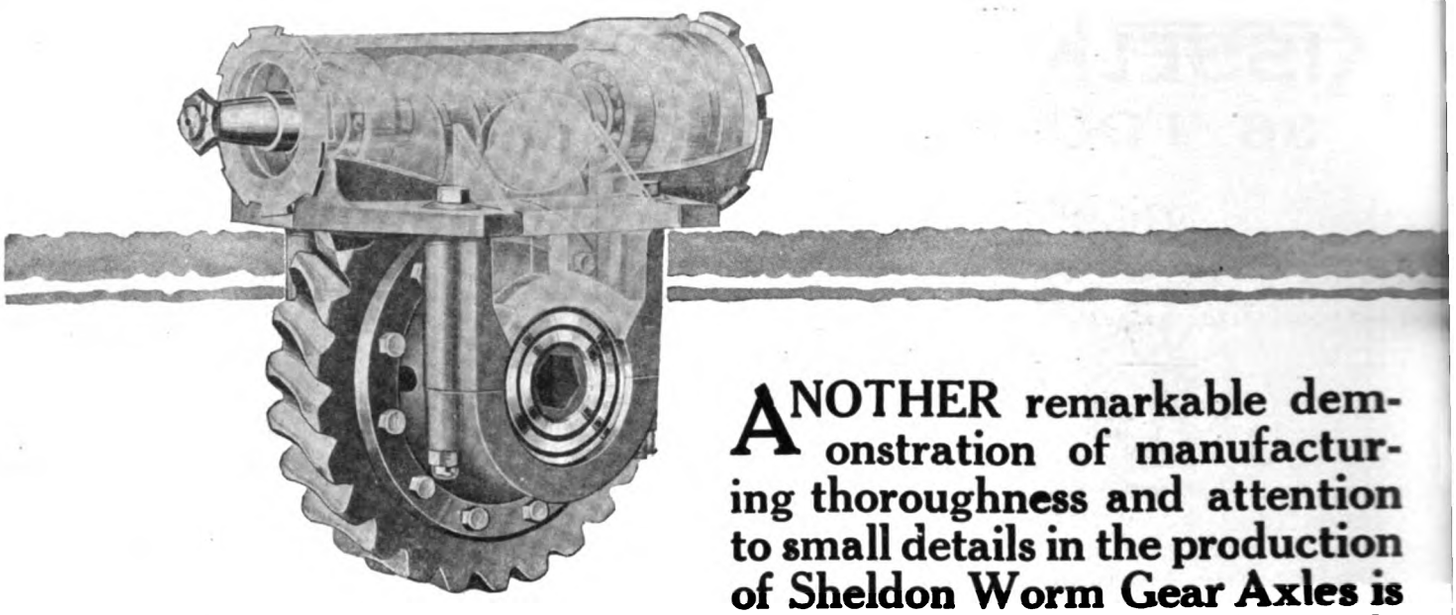
KisselKar Two-Door 36-"Four" and Detachable Sedan Top

If so the complete details will convince you—they are yours on request.

What territory do you want? It may be open.

KISSEL MOTOR CAR COMPANY, 159 Kissel Ave., Hartford, Wis.

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ANOTHER remarkable demonstration of manufacturing thoroughness and attention to small details in the production of Sheldon Worm Gear Axles is shown in the use of the Sheldon Precision Test Fixture illustrated herewith.

In the operation of a worm and wheel a certain amount of heat is engendered which naturally causes a certain definite amount of expansion in the steel worm.

If allowance were not made for this expansion of the metal (and proper allowance was not made in early worm gear days) under extreme working conditions the worm and wheel would freeze together—that is, become so tight as to stick and prevent performance of driving functions. On the other hand if too much allowance were made for this condition you still would not have a perfect working unit.

And the allowance for this condition or looseness of fit, which is called back lash, is figured in measurements and degrees that correspond to thousandths of an inch—really to fractional thousandths.

In the designing of the worm and wheel the engineers have definitely determined a certain number of degrees of back lash necessary to compensate for expansion without making too loose a fit under conditions before the expansion has taken place. It is to insist upon an absolute adherence to this predetermined back lash that it became necessary for the use of the Sheldon Precision Test Fixture for inspecting worm and worm wheels under running conditions.

This fixture gives two readings in thousandths and one in degrees. It also gives the contact bearing between worm and wheel.

The wheel and index A are used to indicate in fractions of thousandths of an inch the exact distance between the center of the wheel and the center of the worm. The index B shows in fractional thousandths of an inch the exact center or variation above or below center across the face of the wheel in relative position to the center of the worm, which in every case is a fixed point. The index C indicates in degrees the amount of back lash.

Before the perfected worm and wheel go into the final assembly they are brought to this fixture and mounted with the center of the worm definitely fixed. The inspector then locates the exact center of the wheel according to the dimensions furnished him by the engineering department. In other words, he is instructed to keep the centers indicated by A—shown

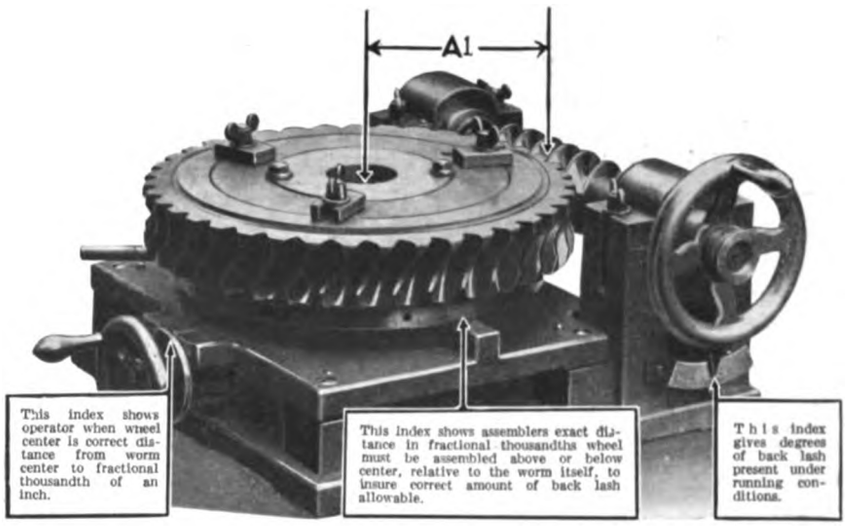
SHELDON
MAKERS OF SPRINGS AND AXLES FOR HEAVY
WILKES-BARRE
CHICAGO: 122 S. Michigan Blvd. SAN FRANCISCO: 444 Market Street

Digitized by Google

by A1—a certain definite distance apart. This he does to fractional thousandths. Then he revolves the wheel C which in effect gives him the operation of the worm and wheel in service. With the members held in this fixture just as they are held in the carrier and with the gears revolving, this inspector must determine accurately just the exact fractional thousandth

This decided, the final assembly department must conform to these figures in their assembly, failure to do which is shown up in the final running tests after the job is completed.

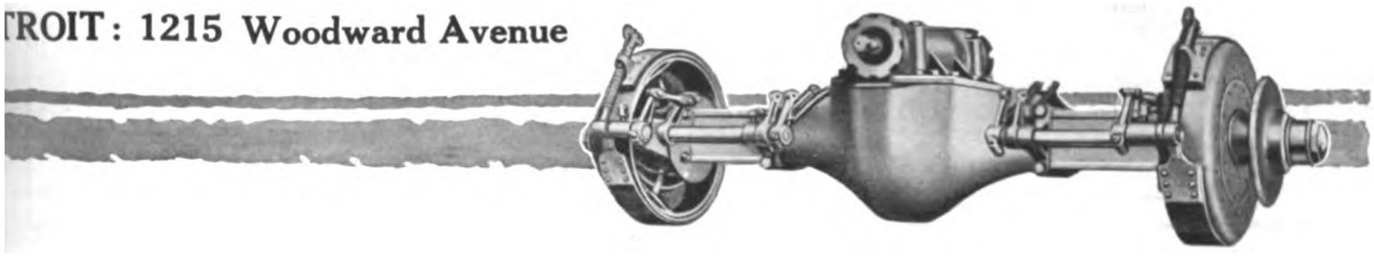
This is but another illustration of the attention paid to details throughout the Sheldon organization to insure the most efficient service to the ultimate con-



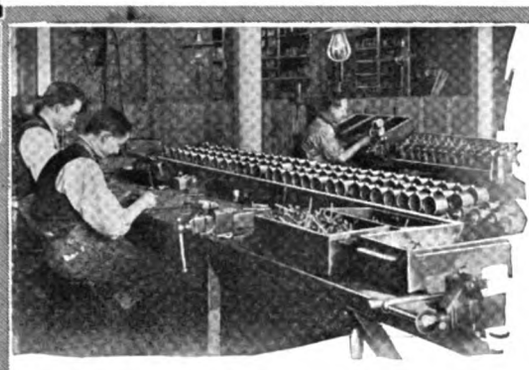
above or below center (or perhaps just on center) the wheel must be mounted in relation to the center of the worm itself to insure the absolute limit of back lash and the proper contact bearing between worm and wheel.

sumer. But it is this attention to these cumulative details that spells the superiority of Sheldon products; because inversely it is the lack of attention to such details that causes the troubles so frequently encountered in products of cheaper manufacture.

AXLE CO.
DUTY SERVICE FOR MORE THAN 50 YEARS
PENNSYLVANIA
TROIT: 1215 Woodward Avenue



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Order and Method Give Results

MUCH can be accomplished where a single purpose reigns. The Zenith is produced in quantity with precision and exactness. There is no confusion—no wasted effort. Operation follows operation on a studied journey through the plant.

Several hundred Zeniths in the making are shown above. In methodical rows they await the expert hands of the assembly crews. The different parts to be applied rest in steel trays before each man. Saving time saves money. The Zenith carries no excess cost.

THE Zenith is a world-wide institution. Factories in four different countries are necessary to supply the demand for this famous device. Such popularity tells its own story of efficient service. You can better realize this fact by reading the Zenith booklet. Send for it.

ZENITH CARBURETOR CO. DETROIT, MICH.

BALL BEARING FACTS

Automobile manufacturers who have been using foreign makes of ball bearings need not worry over the war



2,000 men, skilled in manufacturing ball bearings, are at your command. Works of the New Departure Manufacturing Company.

The New Departure plant is producing between ten and twelve thousand bearings per day and this is not its maximum capacity. We can guarantee your specified deliveries not only now, but for any length of time in the future. We can also guarantee the quality of New Departure bearings to be the equal of any.

We solicit an opportunity to demonstrate to you our ability to completely meet your requirements now.

The New Departure Manufacturing Company, - Bristol, Connecticut

Western Branch: 1016-17 FORD BUILDING, DETROIT, MICHIGAN

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EISEMANN

Eisemann products are not affected in any way by war conditions in Europe.

Not only have we on hand ample stock and materials to take care of our regular customers for many months to come—but we are also in position to increase our production greatly should occasion arise.

We, therefore, have no hesitancy in offering our assistance to any and all manufacturers who may not be able to have their requirements taken care of elsewhere.

Eisemann Not Affected by War

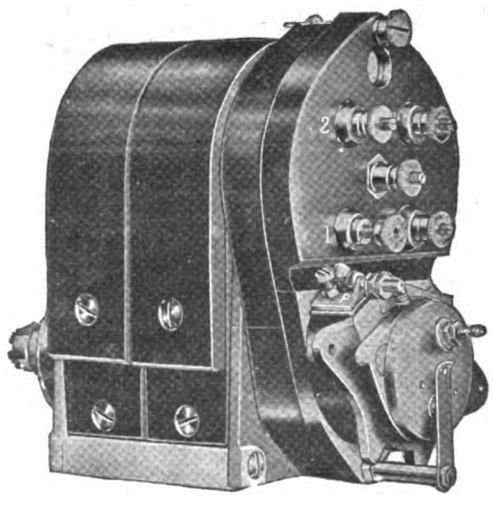
The Eisemann Magneto Co.

Sales and General Offices
32-33d St., Brooklyn, N. Y.

New York
123 W. 52d St.

Indianapolis, Ind.
415-417 N. Capitol Ave.

Detroit, Mich.
802 Woodward Ave.



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Remove The Glare

without cutting off a particle of the effective light in the driving path.

ECLIPSE SAFETY FIRST HEADLIGHT SHADES

is the appliance which has made night driving safe, by enabling the motorist to turn the regular long range quality of light from his headlights, to a broad, general illumination without leaving his seat.

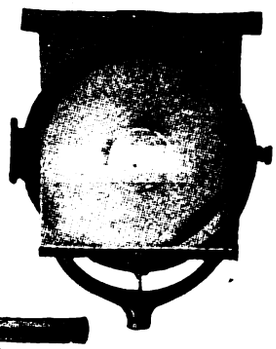
Every motorist needs to tone down the light from his lamps in places where the vivid glare might confuse pedestrians or the drivers of other vehicles.

Eclipse "Safety First" Headlight Shade enables him to do this.

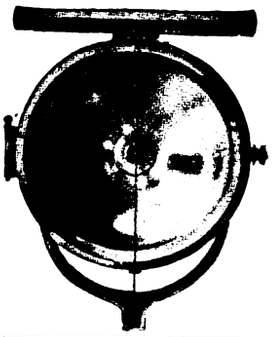
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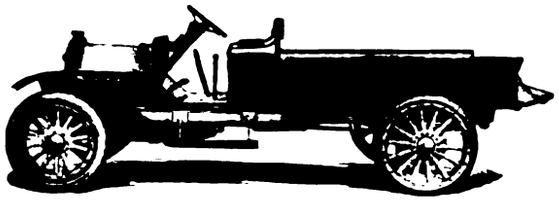
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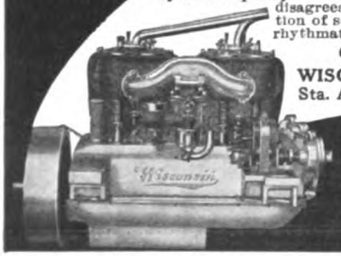
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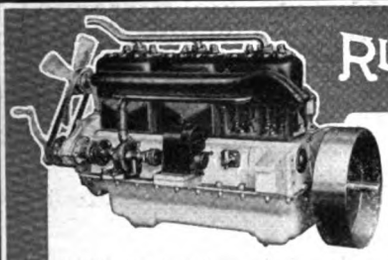
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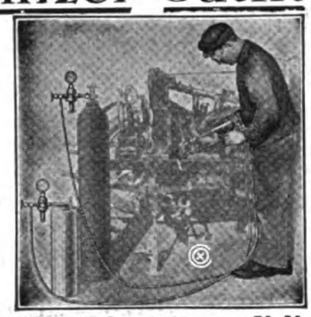
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Washers, Gaskets, Packings and so forth are made of the best quality felt only. When necessary, orders received one day are shipped the next.

N. E. BOOTH, 642-644 Pacific St., Brooklyn, N. Y.

ERE-LONG YOU'LL USE

LONG

Cellular—Honeycomb—Spiral Tube Cooling Systems for Pleasure Cars — Trucks — Tractors.

Write to LONG MANUFACTURING COMPANY, Detroit, U. S. A.

HESS AUTOMOBILE AXLES

Your Car as Good as Its Axles
Hess Axles Make a Good Car
Enough Said

HESS SPRING & AXLE COMPANY, Cincinnati, Ohio

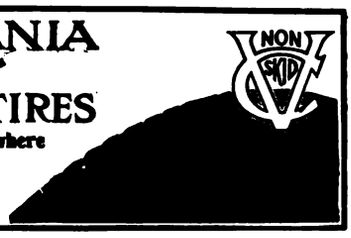
MOTOR WORLD

"The Paper That Is Read, Not Merely Looked At"

It ought to be a regular weekly visitor in your office, Mr. Dealer. $2.00 per year—a small price for a big value. Subscribe today.

Motor World Publishing Co., 231-241 W. 39th St., N. Y.

PENNSYLVANIA Oilproof VACUUM CUP TIRES



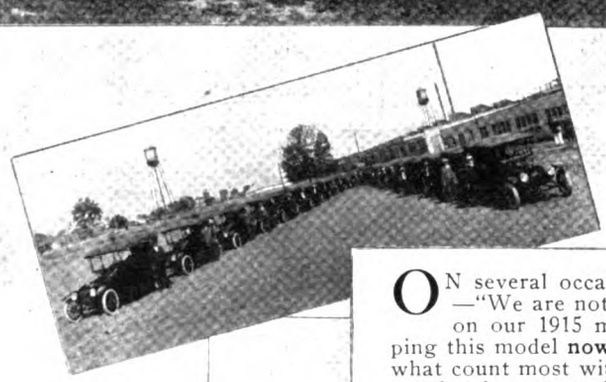
Making Their Mark Everywhere

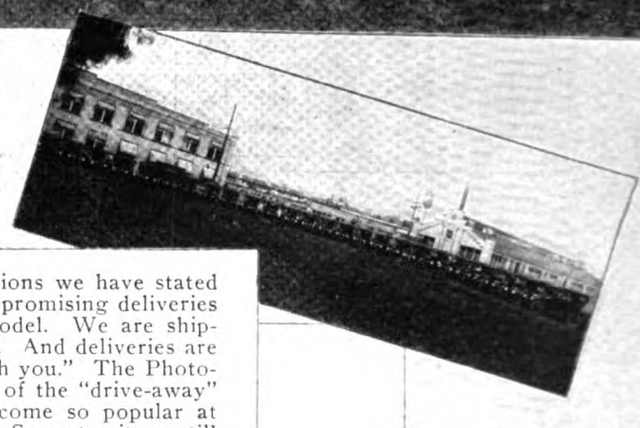
Pennsylvania Rubber Company
Jeannette, Penn.

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Pictures *that speak* Louder *than* Words



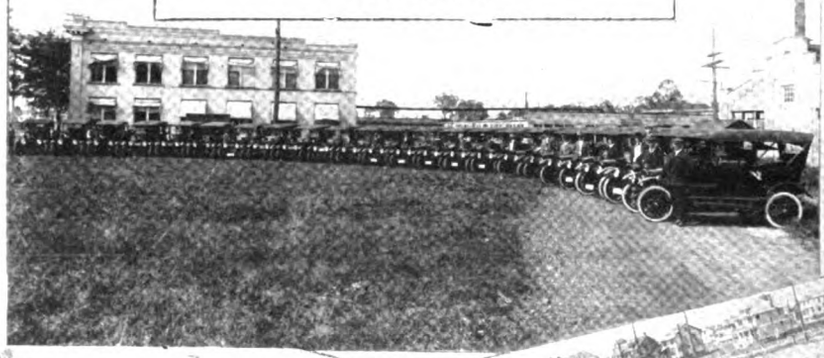


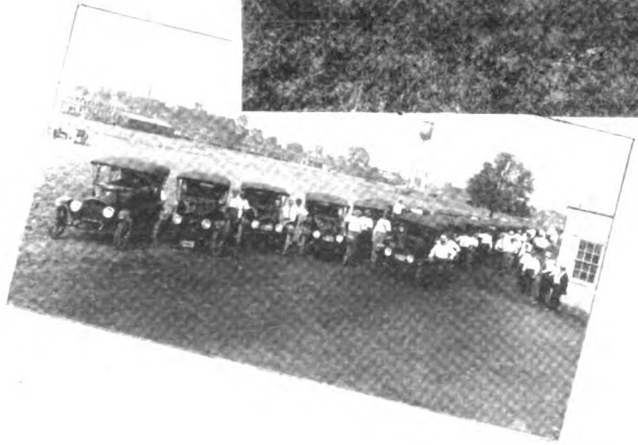


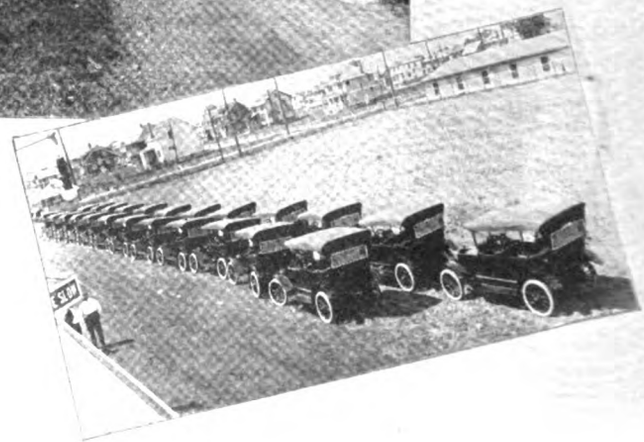
ON several occasions we have stated —"We are not promising deliveries on our 1915 model. We are shipping this model **now.** And deliveries are what count most with you." The Photographs show several of the "drive-away" days which have become so popular at the Maxwell factory. Some territory still open. Write, call or wire for details on our agency proposition—but above all, **hurry.**

Address C. C Stebbins, Sales Dept.

Maxwell Motor Company, Inc.
DETROIT, MICH.







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A new use for your

KLAXON

A letter from L. J. Mutty, Esq., East Orrington, Maine:—

"THE writer, with a party of friends, drove a long distance into the woods on a fishing trip.

"The party separated, some going up stream and others going down the stream.

"This particular trout stream is in a very wild section of Maine, and two of the party strayed away from the stream and lost their way.

"After all had returned to the car with the exception of the two above mentioned, it occured to the writer to send out signals by the Klaxon horn.

"For two hours we signaled every five minutes, giving ten-second blasts.

"The two men barely heard the first blasts but recognized the horn and discovered that they were traveling in just the opposite direction they should have taken.

"They immediately turned about and eventually reached the car; both were nearly exhausted and expressed their appreciation of the merits and good work done by the Klaxon.

"I am merely mentioning this to show you that while I always appreciated the merits of a Klaxon, this little incident has driven home very thoroughly in the minds of my entire party the fact that the Klaxon should be a part of every man's automobile equipment.

"I have heard a number of people express their appreciation of Klaxon "Service" and I believe you will find it a great success."

"The Public Safety Signal"

LOVELL-McCONNELL MFG. COMPANY, MAKERS OF THE "KLAXON," NEWARK, N. J.

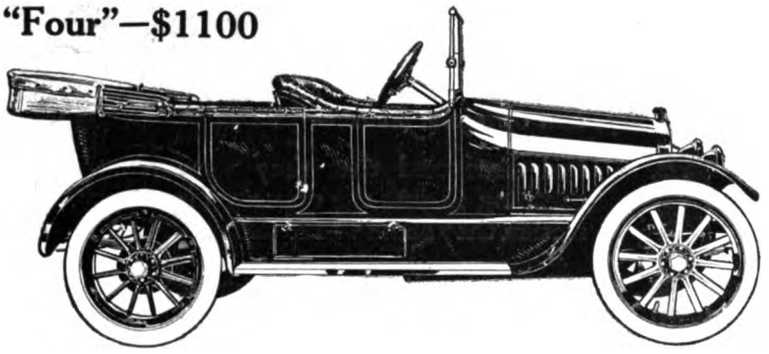
This advertisement planned, written and set up entirely in the Klaxon Factory. Type composition by the Klaxon Press with "Klaxon" type especially designed by Goudy

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Herff-Brooks

This $1100 Four has a 118 in. wheelbase and a 40 horsepower motor

"Four"—$1100



Many present-day four cylinder cars are small and lack power. The Herff-Brooks is not one of these. It is large—118 in. wheelbase—and its motor develops 40 horsepower.

This means that the $1100 Herff-Brooks Four gives you the comfort of the good sized car with ample driving power.

In this, as well as in other regards, the Herff-Brooks stands out among Fours. $1100 is only $25 more than $1075 and only $25 more than $975, yet in comparison with cars at those prices the Herff-Brooks is first by a wide margin.

The Herff-Brooks has a five bearing crankshaft. This gives perfect alignment, rigidity, long life. All highest grade four cylinder cars have five crankshaft bearings, like the Herff-Brooks. Most other moderate priced cars, though, supply only three crankshaft bearings.

For ignition Herff-Brooks uses the Bosch High Tension Magneto DU System. Nothing better is known. What other low priced four uses as good ignition? Remember, Herff-Brooks is the DU System.

Timken and New Departure bearings do the work in Herff-Brooks transmission and rear axle. They are acknowledged the world's best.

The 18 in. steering wheel folds down to give ample room for anyone to leave or enter the front seat. This feature is one made famous by the manufacturer of perhaps the best known four cylinder cars in the country. It is simple and convenient.

Herff-Brooks tires are the famous 34 in. x 4 in. Goodyear, No-Rim-Cut.

The top is a one man top, with easy adjusting curtains.

These advantages belong to the Herff-Brooks Four. You can get them nowhere else except at much higher price.

In size, in power, in style, in equipment the $1100 Herff-Brooks leads.

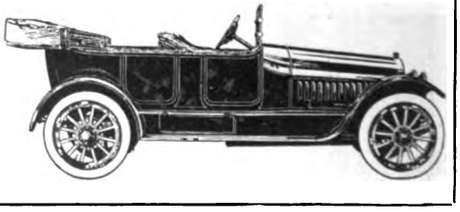
- 40 Horsepower
- Five Crankshaft Bearings
- Drop Down Steering Wheel
- One Man Top
- Complete Equipment
- 118 in. Wheelbase
- 34 in. x 4 in. Tires
- Bosch High Tension Magneto DU System
- Electric Lighting and Starting
- Stewart Speedometer
- Four Cylinders
- Honeycomb Radiator
- Demountable Rims, Extra Rim
- Timken & New Departure Bearings
- Turkish Upholstery
- Stromberg Carburetor

Herff-Brooks cars are completely manufactured, not assembled, in one great plant. We will pay the railroad expenses of any dealer who, coming to Indianapolis to inspect our works, contracts for Herff-Brooks cars.

Accept these advantages in Six Cylinder Quality and Price

- 50 Horsepower
- Highest Grade Bosch High Tension Magneto DU System
- Honeycomb Radiator
- Stewart Speedometer
- 34 in. x 4 in. Goodyear No-Rim-Cut Tires
- Six Cylinders
- Electric Starting and Lighting
- Timken & New Departure Bearings
- 18 in. Folding Down Steeringwheel
- 124 in. Wheelbase
- Seven Crankshaft Bearings
- One Man Top
- Headlight Dimmers
- Demountable Rims, Extra Rim
- Complete Equipment
- Stromberg Carburetor

"Six"—$1375



WRITE FOR CATALOG MW

The Herff-Brooks Corporation, Indianapolis, Indiana

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MOTOR WORLD

A Trade Paper Giving the World's Motor News

Volume XL
No. 14

New York, September 30, 1914

Ten cents a copy
Two dollars a year

GRAY & DAVIS
STARTING-LIGHTING SYSTEM

Six Car Manufacturers Added to the 1915 List

Why?

Six manufacturers who previously used another starting-lighting system have been added to the long list of Gray & Davis users for 1915.

These automobile builders had the entire electric industry from which to make a selection but preferred Gray & Davis.

The Answer

This system is adopted by those seeking quality because it is a better system, because the motoring public demands—

Six Volts—Two Units—Efficiency

GRAY & DAVIS, Inc. Boston, Mass.

Published Weekly by the Motor World Publishing Company, 231-241 West 39th St., New York

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"Any Jack is good enough until it's needed"

The First Puncture with the New Car

— is too often the first realization of the semi-useless jack in the tool box.

With good luck, good management and plenty of perspiration, the makeshift jack which the manufacturer has slipped over may be made to answer the purpose once—and then—

You have a customer for one of the

Genuine Duff-Built

BARRETT AUTOMOBILE JACKS

—in styles and sizes adapted to every make of car or truck.

Quick action and ease of operation are the main characteristics of the Barrett design. Every Barrett Automobile Jack, in addition, is built and tested with the same care as the heavier Barrett Jacks which for 30 years have been the standard of the railroad world. Hence the enviable reputation for reliability and safety acquired by the Barrett.



No. 345 BARRETT JUNIOR
For cars weighing less than 3000 pounds.

To Dealers: Duff's service to dealers enables them to make the greatest possible sales with the most moderate investment. For instance, the Adjustable Footlift, stocked separately, gives a small stock of Jacks a scope embracing all the particular needs of most makes and designs of cars.

WRITE NOW and get our latest advices on the Barrett Line and learn how easily you can make the most of the growing Barrett demand dictated by the actual needs of motorists.

Write, too, for the New Barrett Catalog

— the most advanced and comprehensive automobile jack book published. Invaluable—for its facts, figures and tables—to dealer, owner and chauffeur. Also state if you wish literature for counter or mail distribution—good sales producers.

The DUFF MANUFACTURING CO., Pittsburgh, Pa.

ESTABLISHED 1883

New York, 50 Church Street — Chicago, People's Gas Building
Atlanta, Candler Building — San Francisco, Monadnock Building

Foreign Distributors: European Continent—ARMAND D. RIVIERE et CIE., Paris, France.
Great Britain—WHITE-COLEMAN MOTORS, Ltd., Carlow St., Camden Town, London, N.W.
Canada—Canadian Fairbanks Morse Co.



No. 088 BARRETT STANDARD
Capacity, 1 ton with Adjustable Footlift.



No. 08 BARRETT STANDARD
One ton capacity without Adjustable Footlift.



No. 300 BARRETT
Geared Automobile Jack—1½ tons capacity—with Adjustable Footlift.



No. 100 BARRETT
Geared Motor Truck Jack. Capacity, 3 tons.

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SPARTON



The New Price $5.00

Powerful and Penetrating.

Hand operated—no batteries—no wiring necessary.

Finished in black enamel with nickel trimmings.

Attaches to the side of the driver's seat without the least trouble.

Sparton quality—Sparton materials—Sparton workmanship—and the incomparable Sparton tone.

DEALERS { Right now there is a golden opportunity for you to share in the huge Sparton Business. Write for complete details.

The Sparks-Withington Company

Jackson, Mich.

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A Clay Model Bird's-Eye View of the Panama Canal

Two Examples of Great Engineering

A GREAT CANAL. A GREAT TIRE. Each "the big job" of its kind, done by the master-men for the work.

Each cancels distance. Both the result of wise planning, faultless organization to a single purpose.

Such big things are the work of patient years. Fifteen years of Firestone engineering, organization and singleness of purpose gives you today the tire of Extraordinary Service at only ordinary price

Because specialized production improves quality and cuts cost, the tire authorities, the crack foremen, the extra good workmen, logically land in the Firestone Family of Specialists—America's largest and leading organization devoted only to tire and rim service.

Their greater knowledge, experience and skill give you the extra quality, extra mileage.

Their greater efficiency saves you on price.

And the largest exclusive tire factory, envied by the whole industry for its advanced facilities and scientific methods, saves you more on the price.

Make our advantage in production your advantage in buying. Get the multiplied mileage of Firestone quality at the low cost of Firestone efficiency and volume.

All good dealers sell Firestones to their most experienced trade.

Firestone Tire & Rubber Co., Akron, Ohio—Branches and Dealers Everywhere

America's Largest Exclusive Tire and Rim Makers"

Pneumatic Tires, Truck Tires, Pleasure Electric Tires, Carriage Tires, Cycle Tires, Fire Apparatus Tires, Rims, Tire Accessories, etc.

Firestone
NON SKID TIRES

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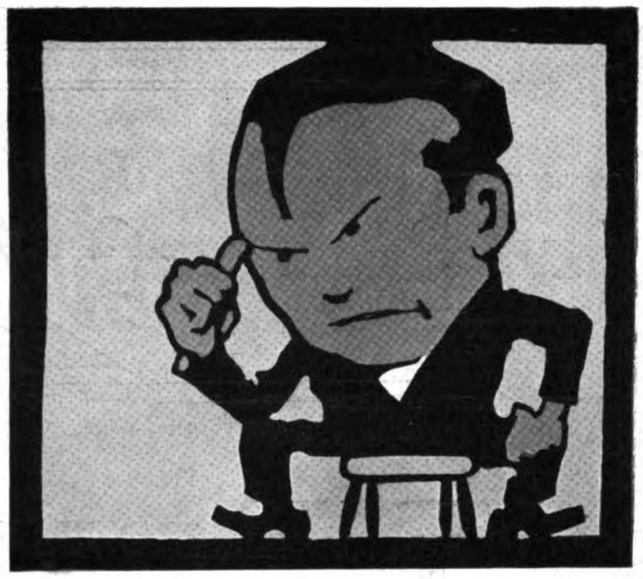
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The man who thinks most about automobile tires doesn't think about them at all after he's put Kelly-Springfield Tires and Tubes on his car. We've done the thinking.



Kelly-Springfield Tire Company

Corner Broadway and 57th Street, New York

Branch offices in New York, Chicago, Philadelphia, Boston, St. Louis, Detroit, Cincinnati, San Francisco, Los Angeles, Cleveland, Seattle, Atlanta, Akron, O.

The Hearn Tire & Rubber Co., Columbus, O.
The Southern Tire & Rubber Co., Houston and Beaumont, Texas
Boss Rubber Co., Denver, Colorado Springs and Pueblo
The Olmsted Co., Inc., Syracuse, N. Y.
Southern Hdwe. & Woodstock Co., Ltd., New Orleans, La.
L. J. Barth, Rochester, N. Y.
Seifert & Baine, Newark, N. J.
Atkinson Tire & Supply Co., Jacksonville, Fla.
Central Rubber & Supply Co., Indianapolis, Ind.
C. D. Franke & Co., Charleston, S. C.
K. & S. Auto Tire Co., Limited, Toronto, Can.
Todd Rubber Co., New Haven, Conn.
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Model 80

Overland

TRADE MARK REG.

BY INVITATION MEMBER OF

$1075

f. o. b. Toledo

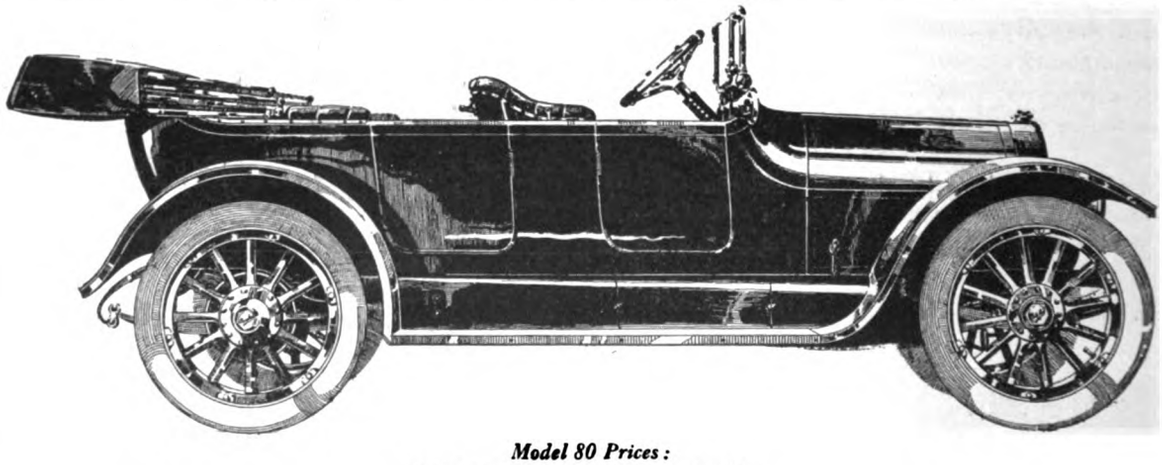
THE newly designed, long underslung rear springs make this 1915 Overland one of the easiest riding cars in the world.

BRIEF SPECIFICATIONS

Motor 35 h. p.	Electric starter	Rear-axle; floating type	Left-hand drive
Full stream-line body	Electric lights	Rear springs; extra long, and underslung, 3-4 elliptic	Center control
Tonneau: longer and wider	All electric switches on steering column	Wheel base, 114 inches	Body:—beautiful new Brewster green finish
Upholstery; deeper and softer	High-tension magneto	34" x 4" tires	Mohair top and boot
Windshield; rain-vision, ventilating type, built-in	Thermo-syphon cooling	Demountable rims—one extra	High-grade magnetic speedometer
	Five bearing crankshaft		Robe rail, foot rest and curtain box

Handsome 1915 catalogue on request. Please address Dept. 50.

The Willys-Overland Company, Toledo, Ohio



Model 81 Prices:

5 Passenger Touring Car - - $850
2 Passenger Roadster - - $795

Model 80 Prices:

5 Passenger Touring Car—$1075
2 Passenger Roadster—$1050
4 Passenger Coupe—$1600
All prices f. o. b. Toledo, Ohio

Model 81 Prices:

Delivery Wagon with closed body - $895
Delivery Wagon with open body - $850

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MOTOR WORLD

Vol. XL New York, U. S. A., Wednesday, September 30, 1914 No. 14

1,000 TRUCKS FOR ARMIES OF EUROPE

Russia and France Place Order for $15,000,000 Worth With Beth-Steel Company—30-day Delivery

Bethlehem, Pa., Sept. 29.—Special Telegram.—Official confirmation of a report that the Bethlehem Iron & Steel Co., South Bethlehem, Pa., had made contracts with the French and Russian governments for the export of 1,000 American motor trucks of from 2 to 5 tons capacity, was received here today. Charles A. Schwab, president of the Bethlehem Iron & Steel Co., has placed his purchasing department at the disposal of these governments.

On Wednesday of this week manufacturers of motor trucks from 2 to 5 tons capacity, who are able to make immediate or quick delivery, are requested to produce models for inspection and demonstration at the South Bethlehem works. These trucks, it is stated, are to be equipped with unarmored military bodies suitable for the transportation of troops and supplies. The French government has requested that the vehicles be delivered to French ports in thirty days.

It is estimated the value of these and other orders for military transport supplies will reach in value the sum of $15,000,000. It is supposed that the trucks will be shipped by way of Canada, thus avoiding confiscation by seizure as contraband.

Urge Truck Convention at Exposition

Representatives of practically all of the transcontinental railroads will be present at the Motor Truck Club convention at Detroit, October 7, 8, 9 and 10, to ask the Motor Truck Club of America to hold its 1915 truck convention in San Francisco during the Panama-Pacific Exposition.

Several of the principal railroads have asked permission to address the convention in order to show the need of motor trucks as feeding systems to the transcontinental railway lines. It is proposed in the plan of the railway men to have simultaneous conventions of good roads associations, railroad organizations, and possibly army maneuvers, as the motor truck has a direct bearing on all of these various departments and organizations.

Chandler 10 Per Cent Special Dividend

A special dividend of 10 per cent on the common stock of the Chandler Motor Car Co., Cleveland, O., the second dividend paid on the common stock within 90 days, was declared at the regular meeting of the board of directors September 28. In addition to the common stock dividend the regular quarterly preferred stock dividend of 1¾ per cent was declared. After the payment of these dividends the company still had a surplus equal to the amount of its original cash capital.

Smalley Heads Graphite Lubricating

Following the death of President Chas. H. Libby of the Graphite Lubricating Co., Bound Brook, N. J., William H. Smalley, who has been vice-president and treasurer, has been elected president; in addition he will perform the duties of treasurer.

Other changes that have been made are: Leigh S. Bache, who was general manager, is now first vice-president as well; Spencer Weart, who was secretary, now is second vice-president as well; George O. Smalley, who was assistant manager, is now assistant treasurer as well. These men compose the board of directors.

FRANKLIN DEALERS GO 100 MILES IN LOW GEAR TEST

Avearage of 11 Miles an Hour Made by 116 Dealers—Consume About 12 Gallons of Fuel and 1.17 Gallons of Oil Each

One hundred and sixteen six-cylinder Franklin cars, driven by dealers in as many different cities, ran all day long on low gear, Thursday, September 24. These 116 cars covered about 100 miles each in the average time of 8 hours 54 minutes, which is at the average speed of approximately 11 miles an hour. The average consumption of gasolene was 12.01 gallons and of oil about 1.17 gallons. James Sweeten, Philadelphia dealer, completed the 100 miles in 6:55, which averages 14.4 miles per hour and is the fastest time made.

Of the 116 cars to start but one failed to finish. The Pittsburgh, Pa., dealer was forced to stop after covering 95 miles because of magneto trouble.

The tests were made under widely differing conditions. The highest temperature encountered was in Redlands, Cal., and in Concord, N. H., where the thermometer registered 92 degrees Fahr. The lowest temperature was in Fort Dodge, Ia., where the mercury stood at 52 degrees.

In holding this national demonstration, which follows the national fuel economy demonstration run off May 1, and in which 94 Franklin cars average 32.8 miles to the gallon of fuel, the Franklin Automobile Co., Syracuse, N. Y., had in mind not so much a plan to make plain that the Franklin system of direct cooling by air will cool, for that fact already is established. It was planned rather to demonstrate at least in part the actual punishment which can be administered to the motor without causing

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distress or reducing its efficiency. During this strenuous test the motor was not stopped.

That there might be no doubt of the authenticity of the test, it was officially observed and the records sworn to before a notary public at the conclusion of the run. Each car carried, in addition to the driver, two observers, who in a great many cases were high civic officials and in others were local newspaper men.

The routes which were chosen for the test included some of the hardest which could be found in the territories of the various dealers, and the runs were made regardless of weather and road conditions. Thus, for instance, the Bar Harbor, Me., dealer was obliged to make four detours through rough pasture land; the Wilkes-Barre, Pa., dealer finished at the top of the famous Giant's Despair mountain; the Denver, Col., dealer climbed to the top of Berthoud Pass and finished on Lookout mountain at an elevation of 11,500 feet; the Greensburg, Pa., dealer drove continually in rain; the Carthage, N. Y., dealer also drove in pouring rain and by way of adding a feature finished with a little girl standing barefoot on top of the engine bonnet; the Pittsfield, Mass., dealer finished at the top of the Jacob's Ladder; the

(Continued on page 16)

Motor Print Merged with Motor Life.

The Motor Print Co., Philadelphia, Pa., publisher of Motor Print, the well-known monthly motorists' paper, has purchased Motor Life, another popular monthly motoring paper, published by J. A. Wittmann, New York. Motor Life will be merged into Motor Print under the name of Motor Print. Motor Life subscribers will, beginning with the November issue, receive Motor Print, which will incorporate some of the departments of Motor Life. The great similarity in the nature of Motor Print and Motor Life makes it possible to merge these two strong motor monthlies. The clientele of both is found with the motor car user and the consumer in general. Their circulation is national, and broadly distributed from ocean to ocean. The Philadelphia publication office of Motor Print at 418-420 Sansom street, will continue to be the publication office of Motor Print after Motor Life has been merged with it.

Van Patten Goes To Cheltenham Co.

L. A. Van Patten, who gave up the Saxon agency, has joined the Cheltenham Advertising Service, 150 Fifth avenue, New York city.

NEW YORK GARAGEMEN IN FINAL SEPARATOR FIGHT

Will Try to Have Obnoxious Ordinance Repealed Over Mayor's Veto—Johnston Condemn's Official's Act

The dealers and garagemen of New York city are preparing for the final move in their fight against the gasolene separator ordinance. They will attempt to have it repealed over the veto of Mayor John Purroy Mitchel.

The Board of Aldermen by a vote of 57 to 1 repealed the law which compels the installation of separators in garages, but the mayor vetoed the repeal, explaining his act in a lengthy message.

The garage interests will appear this week before the General Welfare Committee of the Board of Aldermen and will offer evidence in refutation of the statements made in the message. Following this hearing the committee will report its recommendations to the aldermen and the board will vote again on the measure. A three-quarters vote is necessary to pass the repeal over the mayor's veto, but the garagemen have hopes of success. The vote will be taken October 6.

The main contention of the garagemen, that the separators do not operate successfully, was not touched upon in the mayor's message, and this will be brought out with renewed emphasis in the present proceedings. Following the veto, the garage interests of the city held a consultation, after which President R. H. Johnston of the Automobile Dealers' Association issued a statement, which summarizes the testimony which will be given before this week's committee hearing. It follows:

"I have never seen such an unfair document signed by a responsible public official as the message which the mayor sent to the Board of Aldermen accompanying his veto. He started by saying, 'The main contentions presented by counsel for the garage owners were, first—that the "oil separator" was unnecessary, and, second—the excessive price of these "separators."'

"This is a most incomplete and unfair statement of our case, particularly as the mayor did not consider it necessary to answer any other arguments except the two just quoted which he alleged to represent our side of the argument.

"Our principal contention, as everyone knows, is that the 'oil separator' does not separate. It is a mechanical fraud and, in every case where a 'separator' has been installed, it has absolutely failed to perform the functions claimed for it.

"We proved this point to the satisfaction of the committee of the Merchants' Association which investigated the subject.

"We proved it to the satisfaction of the committee of the Council of Allied Real Estate Interests.

"We proved it to the satisfaction of the Board of Aldermen who, by a vote of 60 to 1, passed the ordinance repealing the 'oil separator' requirements.

"The mayor further states that 'Dr. Moore, the Consulting Chemist of the Fire Department, made an investigation of 48 garages and found, etc., etc.' The records show that the report referred to was not made by Dr. Moore, but was a partisan report made by one of the companies interested in the perpetuation of the condition whereby a great city department forces the sale of the unworkable devices.

"The mayor, in his message, gives copious extracts from reports made by certain employes of the Department of Sewers who rank on the city payroll as unskilled laborers. He did not pay any attention to the report by our Consulting Chemist, Dr. Gail Mersereau, who is recognized everywhere as the best independent oil chemist in the country.

"The mayor laid great stress on the fact that gasolene was found in a certain catch-basin and entirely overlooked or ignored the fact that no material can pass from the sewers to this particular catch-basin, and that any gasolene found in there must have been deliberately poured in.

"He did not think it worth while to mention that there were sewer explosions in New York city long before there were automobiles. He entirely overlooked or ignored the fact that all of the recent sewer explosions which have been traced to a known source have been shown to be due to illuminating gas.

"Nowhere in his message did he make any reference to any of the reports or the affidavit which we had submitted to him which completely refuted all of the statements made by those interested in the so-called 'oil separators.'

"The veto message appears to be, in short, a piece of special pleading made up of extracts from the statements of sewer department employes and manufacturers of 'oil separators.'

"The automobile dealers and garage owners do not, by any means, acknowledge defeat. We are all agreed that we will fight to the extent of our resources this movement on the part of a city department to force us to buy devices which we know are of absolutely no utility. We believe confidently that justice and sound sense are on our side, and, as citizens, we shall continue to maintain our rights as long as there is opportunity to do so."

Jeffery-Dewitt and Champion Merged

The Champion Spark Plug Co., Toledo, O., and the Jeffery-Dewitt Co., Detroit, have consolidated and the business of both companies will be conducted from Toledo. The Jeffery-Dewitt Co. will be devoted from now on exclusively to the manufacture of porcelain and porcelain products.

The machinery and equipment of the Jeffery-Dewitt company will be moved to Toledo. At present the Champion company has a daily output of 25,000 spark plugs, but this will be greatly increased, probably by 5,000 to 10,000. The capacity of the Jeffery-Dewitt company is more than 35,000,000 per year.

Kelly-Springfield Declares Dividend

The Kelly-Springfield Tire Co. has declared the regular quarterly dividend of 1½ per cent on the 6 per cent preferred stock and 1¾ per cent on the 7 per cent second preferred stock. The dividends are payable on October 1 to stock of record September 15.

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REELECT OFFICERS OF NEW YORK GARAGE ASSOCIATION

Joscelyn Remains President—Two New Directors—Organization Discusses Problems at Annual Meeting

The old officers of the New York Garage Association were retained at the annual meeting of the association held Thursday, September 24, at the Hofbrau Haus, New York city, and the gasolene separator question and the prospective raising of storage prices in Manhattan were discussed.

The garagemen have entered anew into the trade's fight against the separator and will continue in an effort to have the repeal of the obnoxious ordinance passed over the veto of Mayor John Purroy Mitchel.

The officers of the association are: President, Louis J. Joscelyn, Joscelyn Garage; vice-president, William Burrows, Niagara Garage; secretary, Charles H. Potter, Uptown Garage; treasurer, William M. Haradon, Royal Garage.

Directors: Bronx—W. L. Byrnes, Byrnes Garage; C. A. Otten, Bronx Garage. Washington Heights—H. L. Hulse, Hulse Garage; S. W. Childs, Childs Garage. Upper West Side—William M. Haradon, Royal Garage; J. Bierman, Manchester Garage. Lower West Side—Ben Blumenthal, (new) West End Auto Palace; Morris Segall, Apthorp Garage; James S. McIntosh, McIntosh Garage. East Side—William Burrows, Niagara Garage; Joseph Stafford, Duford Garage. Downtown—Louis J. Joscelyn, Joscelyn Garage; Frank S. Hannah, (new) 49th street Garage. Harlem—Charles H. Potter, Uptown Garage; Charles Strathman, Strathman Automobile Co.

Britain's Imports Exceed Exports

During the first eight months of 1914 ending August 31, the total value of the British-made automobiles, chassis, parts, motorcycles and parts thereof exported to foreign countries was $17,204,475, while the total value of the imported cars, motorcycles, parts and accessories totaled $27,474,700, or $10,270,225 more than what the British manufacturers exported.

As a comparison with the United States export and import business, the totals for the first eight months of this year are not available, but those for seven months shows that during that period the American motor car and parts manufacturers exported such goods to the value of $20,729,440 and imported only $781,460 worth.

Form Southern Dealers' Association

A southern organization of accessory jobbers will be formed within a short time, a call to all jobbers in Florida, Georgia, Alabama, Mississippi and Louisiana to meet in Tampa for the purpose October 1 having been issued by the American Supply Co., Tampa; the Interstate Electrical Co., New Orleans, and the Turner Electric Co., Birmingham, Ala. The object of the organization is to build up the distribution of supplies and accessories in the South and promote business between the Southern jobbers and the automobile dealers, rather than with Northern houses. Another reason is to arrive at an understanding concerning credit business.

New Member in St. Louis Association

At a dinner-meeting of the St. Louis Motor Accessory Trade Association the Continental Auto Equipment Co. was elected a member of the association. T. L. Hausmann was appointed chairman of the auto show committee. There was a discussion concerning the securing of an auditorium for show purposes in St. Louis, just as one was obtained by the Kansas City and Denver dealers. There will be another meeting within a short time, at which all interested in the motor car and accessory trade in the city will be asked to attend and give their views, so that active work may be started in the endeavor to secure an auditorium or show building.

New Dealer Company In Butte

The Montana Automobile & Machinery Co., which was recently organized in Butte, Mont., has taken over the business of the Cartercar Montana Co. It will operate a garage and machine-shop at 109 North 26th street and will stock accessories. Besides the Cartercar, it has the Franklin and Packard agencies. The officers of the new company, who are all Butte business men, are: President, Arthur Barth; vice-president, L. F. Thornton; secretary-treasurer, Arthur Trenary; sales manager, R. A. Dewitt; shop superintendent, Peter Rowan.

O'Neill Made Stromberg Secretary

W. L. O'Neill, who long has been connected with the Stromberg Motor Devices Co., Chicago, Ill., has been made secretary and sales manager of the company. Formerly he was manager of the company's Detroit branch.

S. A. E. SEES HOW TIRES ARE MADE AND DESTROYED

Firestone Man Illustrates Lecture on Damaged Tires Before Metropolitan Section—Mill Man Talks on Fabric

A great deal of interesting information on some of the less known aspects of the tire industry was given at the last meeting of the Metropolitan Section of the Society of Automobile Engineers, held September 24 at the Automobile Club of America, New York. Papers were read by L. Greenwald, service manager of the Firestone Tire & Rubber Co., and H. Van R. Scheel, of the Brighton mills.

Greenwald's paper was of a practical nature, illustrated by photographs of damaged tires projected on the screen. It was shown that the almost uncanny ability of the tire adjuster to detect causes of defects is due to his ability to recognize evidence in the tire itself, and that a large proportion of tire damage results from the hinge-like flexing of the fabric which ultimately ruptures the threads.

Scheel's paper dealt with the preparation of the cotton, and brought out much information. It is conceded, he stated, that Sea Island cotton is the best because it is stronger per unit of cross section, finer, longer, and better protected by its waxy envelope. The cotton fiber is a ribbon-like twisted filament, which would be represented, on a magnified scale, by a fire hose, flattened, 1 inch thick and 130 feet long. The cotton is ginned in a special machine designed not to injure the fiber, and then cleaned, the short fibers removed, the long fibers laid as nearly parallel as possible, which is called drafting, and doubled to get evenness. The breaking strength of a yarn varies with its moisture; the wetter the yarn the stronger the break.

Twisting is carried just far enough to give maximum strength with sufficient softness, which is important both in flexing and in the matter of rubber adhesion. In conclusion, Scheel said:

"Inasmuch as the quality of the fabric used in a tire is one of the most important considerations to which the tire maker must give attention, there are necessary in the fabric mill systems of testing and inspection found, perhaps, nowhere else in the textile world. Every sample submittted and every pack-

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age of raw material received must be tested, the product of each machine each day must be tested, and each roll of fabric must be examined, re-examined and tested in order that only the very best possible product will be delivered to the tire maker. Standard conditions of test have been developed for each of the foregoing, and in considerable detail."

S. G. V. in Reorganization Receivership

With a view to reorganizing, certain officials of the S. G. V. Co., Reading, Pa., a Pennsylvania corporation, applied for a receivership last week; R. E. Graham, president of the S. G. V. Co., and vice-president of the S. G. V. Co. of Delaware, a holding company, was named. A creditors' meeting will be held today, after which it is anticipated that the factory, which has been temporarily shut down, will resume operations and work will be begun on the plan of reorganization. The receivership proceedings are intended to dispose of the holding company, which has a liability charge against the company. Assets are said to be about double the liabilities and no real difficulty is anticipated.

Detroit Sales Agency For Gadabout

The Gadabout Sales Co., Inc., has been formed in Detroit to sell the Gadabout light car, made by the Gadabout Motor Corp., Newark, N. J. The incorporators and officers are: Charles F. Gazler, vice-president and general manager of the Detroit Axle Co., president; Otis Currie, president and treasurer of the Currie Machine Co., treasurer; Jasper Currie, secretary of the Currie Machine Co., secretary. Temporary headquarters are at 45 East Fort street.

Petre Independent Consulting Engineer

L. J. Petre, during many years in charge of the experimental and research departments of the F. B. Stearns Co., Cleveland, O., has gone into business for himself as an expert consulting engineer. He will also organize what might be styled a club, consisting of some 300 automobile owners, whose motor cars he will personally inspect at regular intervals. He has established headquarters temporarily with the Auto Repair, Storage & Supply Co., Euclid avenue.

Chapin and Waldon on Good Roads

Following the addition of M. L. Pulcher and P. D. Wagoner to the Commercial Vehicle Committee of the National Automobile Chamber of Commerce, R. D. Chapin and S. D. Waldon have been appointed to the Good Roads Committee of the national body.

PROMINENT MEN IN TRADE WHO ASSUME NEW DUTIES

Resignations and Promotions That Serve to Place Many Workers in New Places—Few of Them Leave the Industry

Joseph J. Martin has been appointed Western sales manager of the Signal Motor Truck Co., Detroit, Mich.

R. G. Larimer has been appointed Eastern district manager for the truck department of the Studebaker Corp., Detroit, Mich.

Charles W. Lloyd has been made treasurer and retail sales manager for the E. C. Johnson Co., Philadelphia, Pa., Reo and Premier distributer.

Bert Hewett has joined the sales staff of the United States Tire Co., New York, N. Y. He will have special supervision of the commercial vehicle tire department.

Ralph Merritt has been appointed Ohio district representative for the King Motor Car Co., Detroit. Previously he held a similar position with the Buick Motor Co.

Charles A. Palmer has been appointed distributer in Los Angeles and the Pacific Coast of the Johnson shock absorber, manufactured by the Triple Action Spring Co., Chicago, Ill.

Fred E. Castle has been appointed Michigan representative of the Flanders Electric Co., Inc., and will have his headquarters and salesrooms at 872 Woodward avenue, Detroit, Mich.

J. F. Reddick has been appointed advertising manager of the Stromberg Motor Devices Co., Chicago, Ill. Previously he was a director of publicity for the Goodyear Tire & Rubber Co., Akron, O.

D. K. Moore, sales manager for the Weston-Mott Co., Flint, Mich., has also been appointed sales manager for the Northway Motor Mfg. Co., Detroit, and of the Jackson-Church-Wilcox Co., Saginaw.

John S. Wiese, for the past few years manager of the United States Tire Co.'s Los Angeles branch, has resigned to accept a similar position with the Winton Motor Car Co.'s Pacific Coast branch in the same city.

Stephen A. Douglas has been appointed a special factory representative for the Stewart-Warner Speedometer Corp., Chicago, Ill. Previously he was Jones Speedometer sales manager for the H. W. Johns-Manville Co.

Z. B. Barber, until recently Middle Western sales manager and for three years the Michigan distributer of the Briggs-Detroiter Co., has been appointed general sales manager of the Monarch Motor Car Co., Detroit, Mich.

George Schwartz has assumed the management of the Watertown (S. D.) branch of the Blain Automobile Co. He succeeds Earl Addison, resigned. Schwartz previously was connected with the company's home office in Redfield, S. D.

F. A. Flint has joined the sales staff of the Dorris Motor Car Co., St. Louis, Mo., as a special representative. His time will be devoted to the sale of Dorris pleasure and commercial cars and the assistance of Dorris dealers.

Henry W. Gray has been appointed manager of the motor car accessories department of the H. W. Johns-Manville Co. in St. Louis, Mo. Formerly he was connected with the General Motors Truck Co., the Neustadt Auto Co. and the Mound City Sales Co.

D. M. Trombley has been made general sales manager for the De Luxe Automobile Co., St. Louis, Mo. Formerly he was identified with the Motor Car Mfg. Co. and the Cole Motor Car Co., Indianapolis, Ind., and the Cole Motor Car Co. of Missouri.

Ralph P. Merritt, for several years district sales manager of the Buick Motor Car Co. in Northwestern Ohio, has been appointed to a similar position with the King Motor Car Co. in the same territory; B. M. Burbank has been appointed district sales manager of the King Motor Car Co., Detroit, with headquarters in Omaha, Neb.

J. W. Whitehead, general sales manager of the Diamond Rubber Co. of San Francisco, Cal., has resigned to join the Norwalk Tire & Rubber Co., Norwalk, Conn. For the past eight years he was assistant to Clifford E. Mathewson, the Pacific representative of the Diamond company, who now is general sales manager of the Norwalk company.

Following the promotion of J. C. Weston to be general sales manager of the United States Tire Co., O. S. Tweedy, who has been Eastern District manager, has been made assistant general manager. George S. Shugart, formerly assistant to Weston when the latter was manager of the Central District, has been made district manager and will continue to have headquarters in Chicago.

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APPERSON ENLARGES LINE BY ADDING FOUR AND SIX

Now Has Two Fours and Two Sixes—Air for Carburetters Passes Through Casting—$1,485 for Four; $1,785 for Six

The addition of two brand new models, one a four and the other a six, has brought the line of the Apperson Bros. Automobile Co., Kokomo, Ind., to four cars, two fours and two sixes. The new cars are alike in their general design, though differing in details and dimensions, and also are of the same general type as other Apperson models. Changes are all in the way of increased lightness, refinement and simplicity.

The new six is Model 6-45 and the four is Model 4-40; they mount only five-passenger touring bodies and the prices are $1,485 for the four and $1,785 for the six. The two models carried over are the 6-60 ond the 4-45. The six is built in three wheelbases; seven-passenger, 134-inch, at $2,350; five-passenger, 128-inch, at $2,200, and roadster, 122-inch, at $2,200. The four is built in two wheelbases; touring car, 120-inch, at $1,685; roadster, 116-inch, $1,685, and coupe, 116-inch, $2,350. All Apperson models are fitted with the Bijur electric lighting and starting system.

Both new cars have block-cast L-head motors; the four has cylinders 4 x 5 and the six is 3½ x 5⅛. Drive is through the Apperson contracting band clutch, three-speed gearset and propeller shaft with two universals, to the full-floating axle, which is noticeable for its very compact differential housing. Drive is taken through the rear springs, which are underslung.

Not a few interesting features have been incorporated in the new motors. In both the air passes to the carburetters through passages cored in the cylinder castings; in the case of the six there is no exterior air pipe, while in the four there is a flexible metal tube from the passage to the carburetter. The Eisemann magneto is on one side of the motor and the carburetter on the other, so that one of the controls has to be carried across.

This is accomplished by running a tube straight through the engine casting from side to side, the tube forming a bearing for a shaft through which motion is transmitted. Other changes in Apperson design include the use of independent force feed oil leads for the camshaft bearings so that positive feed replaces splash; the shortening of the cross shaft carrying the brake and clutch operating members; the use of rear spring brackets made integral with the frame gussets and strongly ribbed, and so on.

Hess-Bright Meets Import Shortage

Finding itself unable to draw upon its Berlin factory for bearings, the Hess-Bright Mfg. Co., Philadelphia, Pa., has arranged to have some of its preliminary manufacturing work done by other companies and is thus meeting the possible shortage in stock. The outside work is largely the manufacture of rings and in some cases complete bearings, particularly thrusts. Much of the finishing, however, is done in the Hess-Bright factory and all bearings pass the usual Hess-Bright inspection and are covered by the usual guarantee.

The company's American manufacturing facilities are being increased and it is proceeding on this independent basis of manufacture despite the fact that bearings are now being shipped from Berlin; the import, however, is not heavy; communications have been interrupted since August 1.

Pacific Coast Branch For Knight

The Knight Tire & Rubber Co., Canton, O., has opened a direct factory branch in San Francisco, Cal., which will act as a central distributing point for the Pacific Coast. At the same time subbranches have been opened in Seattle, Wash., and Los Angeles, Cal. The entire Coast organization is under the supervision of Jas. A. Frye, Western District Manager.

N. Y. Lewis Agency To Stewart Co.

The Stewart Automobile Co., 225 West 57th street, New York, has taken the agency for the Lewis car. Its territory comprises practically thte whole of New Jersey, Long Island, Staten Island and New York city up to Peekskill. It has established an agency in Jersey City, N. J., at the Junction Motor Car Co., 535 Communipaw avenue.

Enger Concentrates On Single Six

The Enger Motor Car Co., Cincinnati, O., hereafter will concentrate its entire plant and capital upon the production of the single six-cylinder model which was briefly described in Motor World of Sept. 16. This model is equipped with a Continental motor, 3½ x 5, and lists at $1,495, with five- or seven-passenger touring body, electric lighting and starting, and the usual equipment.

GARAGES ON NEW YORK'S WEST SIDE RAISE RATES

Propose to Boost Storage $5 a Month October 1—Put Gasolene on 5-Cent Profit—Standardize Businesses

The West Side Division of the New York Garage Association, comprising garages between 125th street, 8th street, 5th avenue and the Hudson river, proposes to raise all storage rates $5 a month Thursday, October 1, and put gasolene on a 5-cent profit basis. This is the culmination of a campaign that has been waged on the West Side for months.

The garagemen state that storage at present rates has shown no profit and often a loss, the profits of the business being derived from an exorbitant profit on gasolene. Agitation for a raise in rates has been in progress for a year or more and at the present time about 30 garagemen have signified that it is their intention to take steps to make the change.

For the purpose of establishing a rate basis, the garages have been put into two classes, A and B. A includes fireproof garages in convenient and desirable locations; rates will be: Runabout, $35; touring car, $40; enclosed car, $45. B includes non-fireproof garages in less convenient and less desirable locations; B rates will be $30, $35 and $40, being $5 lower than Grade A. Gasolene will be sold for 18 cents and the profit in lubricating oils will be reduced approximately 25 per cent.

Filling stations, which sell gasolene for 14 cents, a 1-cent profit, have proved a strong competitor for the garage with its high-priced "gas" and a profitable storage has been made imperative. Other divisions located in Manhattan are working on the same plan.

Alma Truck Becomes Republic

The title of the Alma Motor Truck Co., Detroit, Mich., manufacturer of the Republic commercial vehicles, has been changed to Republic Motor Truck Co. The change has been made to avoid confusion.

Detroit Branch For Apperson

Apperson Bros., Kokomo, Ind., have opened a Detroit branch and salesroom. The building at the corner of Woodward and Lathrop avenues has been secured for the purpose.

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URGE LOZIER TO REORGANIZE; APPOINT TEMPORARY RECEIVER

The Detroit Trust Co. has been named temporary receiver for the property of the Lozier Motor Co. by Judge Tuttle, U. S. District Court, and officials of the trust company are now busy both in Detroit and in Plattsburg, N. Y., making an inventory of the company's property.

Judge Tuttle suggested that an effort be made for a reorganization of the company, and it appears that such an effort may succeed.

Until the result of the appraisal of the company's property and its financial condition has been received by Judge Tuttle, the Lozier company, with the exception of the service department, will be closed.

In appointing the Detroit Trust Co. as temporary receiver, Judge Tuttle instructed the company to prepare its inventory and appraisal report in conformity with the bankruptcy laws, so that if the reorganization should not take place the papers would be ready to place the company into a trusteeship. The trust company bond was fixed at $25,000.

New New York Quarters for Braender

In order to make room for necessary expansion larger New York quarters have been taken for the Braender Rubber & Tire Co. The offices and salesrooms have been removed from 1987 Broadway to 250 West 54th street, where a complete stock of tires, tubes and accessories will be carried. The establishment will be in charge of Harry Braender, vice-president of the company.

Further Action Against Standard Oil

The assistant prosecutor in Jersey City, N. J., has stated that the complaint of the Crew-Levick Oil Co. against the Standard Oil Co. will be submitted to the grand jury. The Crew-Levick company recently brought action under the "Seven Sisters" unfair competition and monopoly act but the court absolved the Standard company.

Insurance Field Has a "Difference"

The Eastern Automobile Conference, which supervises motor car insurance matters in the East, has heard an appeal from the Western Conference, regarding nonaffiliated competition. The complaint of the Western Conference is that certain large companies decline to affiliate with the Western Conference. The Eastern Conference decided to act. The Western Conference may withdraw all advisory rates in that territory October 15 unless the companies complained of affiliate. Should this happen the Eastern Conference might also withdraw all advisory rates in the Western Conference.

Winner Joins Chevrolet Organization.

The Chevrolet Motor Co. of Brooklyn, N. Y., has made a number of additions to its sales force. These include J. J. Winner, formerly manager of the C. T. Silver Co. of Brooklyn, and Victor D. Tillotson, formerly with the Reo Motor Car Co. of Brooklyn. At the same time, A. H. Etzel has been appointed superintendent of the service station. Other members of the Chevrolet sales organization include E. W. Bartow, C. A. Phipps, F. A. Fleishman and H. L. Richardson. W. A. Sellon is manager of the branch.

Cab Stand Fight in New York Ends

The fight of the large taxicab operating corporations and the more pretentious hotels against the establishment of taxicab stands in front of the hotels by the New York city authorities has ended in favor of the city. Ornamental signs this week are being placed in front of all hotels and at all points where the city desires cab stands. Each sign states the number of motor and horse cabs that may occupy the stand.

Batavia Declares Extra Dividend

The Batavia Rubber Co., Batavia, N. Y., has declared a quarterly dividend of 1½ per cent on the preferred stock, a quarterly dividend of 1 per cent on the common stock and an extra dividend of ¾ of 1 per cent on the common, payable October 1.

Imports in August 74 Cars

The Custom House Statistical Bureau, New York, has made public a detailed table of merchandise in bond on September 1, 1914, for the district of New York. According to the report 74 motor cars, valued at $146,610, were imported in the month of August, as compared with 78 cars, valued at $156,582, for the same period in 1913. Parts imported are valued at $21,727, against $9,330 in 1913.

First Denby Model ¾-Ton

In the issue of September 23 it was stated that the Denby Motor Truck Co., Detroit, Mich., will build a 1-ton truck in addition to its 1½-ton truck. This should have read: In addition to its ¾-ton truck.

TEST MILEAGE PERFORMANCE OF ELECTRICS AT N. Y. SHOW

For the purpose of demonstrating the possibilities of the modern electric vehicle, both of the pleasure car and commercial truck types, the New York Electric Vehicle Association has perfected plans for the running of a series of mileage tests during the Electrical Exposition and Motor Show in New York, October 7 to 17. These tests will be run on the board track which is laid out each year on the third gallery of the Grand Central Palace. One of the tests will be for the greatest mileage on a single charge of the battery.

A second test provides for a continuous day and night run throughout the ten days of the show. This is to be accomplished by having two batteries, to be used alternately.

R. P. Henderson To Assist Chas. P.

Following the reaffiliation of Chas. P. Henderson with the Cole Motor Car Co., Indianapolis, Ind., as general manager of sales and advertising, R. P. Henderson, his brother, has been appointed assistant to him. Latterly, R. P. Henderson has been in charge of the Regal business in Canada as vice-president, with supervision over sales and advertising of the Canadian Regal Motors Ltd., Berlin, Ont.

Smith Heads Blair Truck

Robert W. Smith, president of the Newark (O.) Board of Trade, has been elected president of the Blair Motor Truck Co. Chas. A. Smith will be secretary-treasurer. The company was recently incorporated with $100,000 capital and will take over the plant of the Blair Mfg. Co.

Sutton G. M. T. St. Louis Manager

N. F. Sutton has been appointed manager of the St. Louis branch of the General Motors Truck Co. He has been connected with the company during the last two years in various capacities and was formerly in the motor car business in Dallas, Tex.

Best None Too Good For Boosters

Any one who received one of the white hats donated by President Allen of the Allen Auto Specialty Co., at the Big Village Motor Booster's outing last week, must have realized 'ere now that they could not be purchased for any such sum as 27 cents, as a typographical error had it in last week's Motor World. The hats cost $4.50 a dozen, which is 37½ cents each.

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What Used Cars Cost

Do you know what each used car you handle costs you?

You know what you allow for it when accepting it in part payment for a new car, you also know how many dollars you sell it for but these two figures do not tell you what you make or lose on it. There are so many factors entering into the profit or loss of a used car that it is only the dealer who takes recognition of all of these who knows the actual facts.

Here are a few examples of some factors that must be considered: You pay rent for your building, and if you keep a used car standing on the salesroom floor for a month or so, or keep it in the garage or in some storage place, it is always costing you money. That car should be made to pay for these expenses.

Add in Insurance Cost

The sum total of your insurance cost for the year should be divided and each used car that you carry in your place of business given its share of the total. In other words, you are not actually knowing what the used car costs you unless you do this.

If you do not pay salesmen, who devote all of their time to used cars, then you can only in all fairness make each used car you sell pay a certain fraction of the salary of some of your salesmen. One up-to-date dealer keeps a complete record of the exact time each salesmen spends on different used cars, and it is often longer than the time needed in selling a new car.

In order to know accurately what a used car costs you should attach a ticket to it, the moment it enters your place of business, you can even afford to open a card for it in your card index system for sales. Enter each detail on this card, each bit of work done on the car, each new part, each hour of labor spent by the repair force, and to this add all of the other expenses connected with the car while it remains in your place of business.

Time Must Be Paid For

But do not stop here, because after you have sold the car, you may still have some expenses; there may be several telephone calls asking for information as to where spare parts can be purchased, or several stops at your place of business to ask regarding troubles with it. These all take up time and should be allowed for when making your estimate as to the profit you make out of a used car. When you do this you will become more and more assured of the one fact, that the dealer must be very careful in making his allowances on used cars. He must underestimate rather than overestimate.

Have You a Junk Pile?

It is a commendable feature of many modern garages and repair-shops that their floors are clean and there is something more than a semblance of law and order in their appearance. It is rapidly coming to be the rule that waste material, discarded parts, partly dismantled bodies which no longer are of use, and other junk of the kind—for surely it is nothing more than junk—is cleared out before it has a chance to accumulate.

A Place for Everything

The modern garage proprietor is coming to realize that the space which is occupied by junk can more profitably be used for other puprposes; and so the junk pile slowly but surely is disappearing. It should be the aim of every garageman to hasten its disappearance. In the modern factory where everything moves according to schedule, there is a place for everything and everything is in its place. There is no real reason why this should not be so in the modern garage. And the fact of the disappearing junk pile is eloquent testimony of the growing appreciation of efficiency which is becoming apparent.

Bring Order Out of Chaos

In one Long Island garage, the floor is literally covered with spare parts, tools, etc. There is scarcely room for the workmen.

Contrast this with another in which all the old junk is carried to the cellar and there stored where it is out of sight and above all, out of the way.

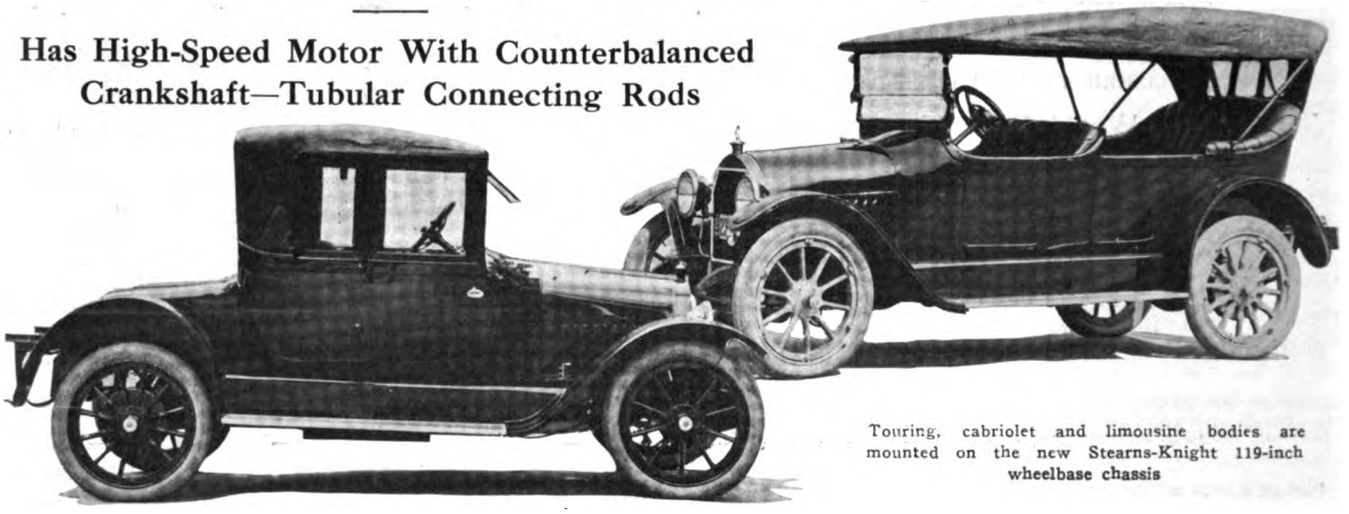
This old junk which accumulates represents, in a certain sense, an investment; it occupies room for which you must pay. Therefore it is logical to expect that its sale will bring back part of the investment.

In your garage bring order out of chaos. Sell your old junk—or at least store it where it is out of the way.

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New Stearns-Knight Four Sells for $1,750

Has High-Speed Motor With Counterbalanced Crankshaft—Tubular Connecting Rods



Touring, cabriolet and limousine bodies are mounted on the new Stearns-Knight 119-inch wheelbase chassis

A four-cylinder Stearns-Knight five-passenger touring car completely equipped for $1,750; a two-passenger cabriolet, serving as an open roadster for fine weather, and a closed coupe type for fall and winter use at $2,250; and a limousine at $2,850, constitutes one of the most important trade announcements in the Knight motor field in America.

For three years the F. B. Stearns Co. has been working at its Cleveland factory on its medium-priced car, which in the Knight field must be considered a particularly low-priced model. The company expects to market 1,500 of these for 1915. Production started August 22 and at present the first lot of 500 is going through the factory. Demonstrators have been shipped.

This Stearns-Knight is a brand new design in a great many respects, and while the Knight principles as adopted by Stearns three years ago are adhered to in many respects, the car is brimful of improvements.

Here are some of its more important details: Four-cylinder motor 3¾ x 5⅝ inches bore and stroke; wheelbase 119 inches; tires with demountable rims 34 x 4 inches; weight of touring car complete ready for the road, 3,100 pounds; rear axle gear ratio on all models, 4.5 to 1; horsepower, according to official chart, 40 at 1,250 r. p. m. and 60 at 2,400 r. p. m.

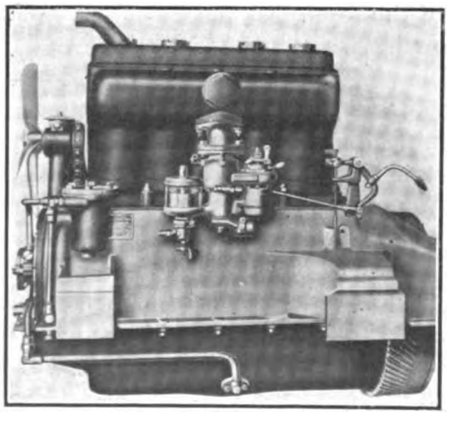
This new car is marketed in but three body styles with the same wheelbase and general chassis details on all. The touring car is in one standard color, Stearns green, with black hood and fenders; and the cabriolet and limousine are finished in either blue or green with black hood or fenders.

For the first time the Stearns company uses a block cylinder casting with integral intake and exhaust manifold; a counter-balanced crankshaft with four integral balance weights is adopted for the first time; a single Bosch high-tension magneto constitutes the ignition system; the service brake is a band type on the gearbox, a construction making its debut with this company; cantilever rear springs are used for the first time; in the rear axle are two improvements—spiral bevels for the large crown gear and pinion on the propeller shaft, and a pressed steel housing for the stationary part of the axle instead of a forging as heretofore; the gasolene tank is now located in the cowl for gravity feed; tubular connecting rods are introduced; and there are many other minor improvements incorporated.

SPECIFICATIONS IN BRIEF OF STEARNS-KNIGHT FOUR

Price—	
Touring	$1,750
Cabriolet	2,250
Limousine	2,850
Make of motor	Stearns
Number of cylinders	4
Shape	Knight
How cast	Block
Bore	3¾
Stroke	5⅝
S. A. E. rating	22.5
Magneto	Bosch
Carburetter	Stearns
Starting-lighting	Gray & Davis
Clutch	Cone
Gearset	3-speed
Wheelbase	119
Tires	34 x 4
Wheels	Wood
Steering	Left
Control	Center
Type of rear axle	Semi-floating
Make of rear axle	Stearns

Equipment: One-man top, windshield, Klaxon horn, speedometer, tools in tool box, jack, pump, etc.



Carburetter side of motor, showing compact design and integrally cast manifold

In general design the motor, clutch and gearbox constitute a unit supported at four points on the frame, at the four corners of the motor. The heavy section aluminum casting forming the top half of the crankcase also divides at the rear, leaving an opening for the flywheel, and back of this carries the gearbox as a unit. This construction is one of the foundation stones in this motor design, in that rigidity in the crankcase has been considered a necessity for efficiency in high-speed motor work.

The block cylinder casting is symmetrical and very neat design with its integral manifolds on opposite sides. The base of the crankcase is a steel stamping, making it very light, and at the front stampings are used as covers for the timing chains driving eccentric, magneto and pump shafts.

The most important feature inside the crankcase is the counter-balanced crankshaft carrying the four integral crescent-shaped weights and having the two particularly heavy crank cheeks used in order to give the required rigidity.

The four integral balance weights are used not to put the crankshaft in ro-

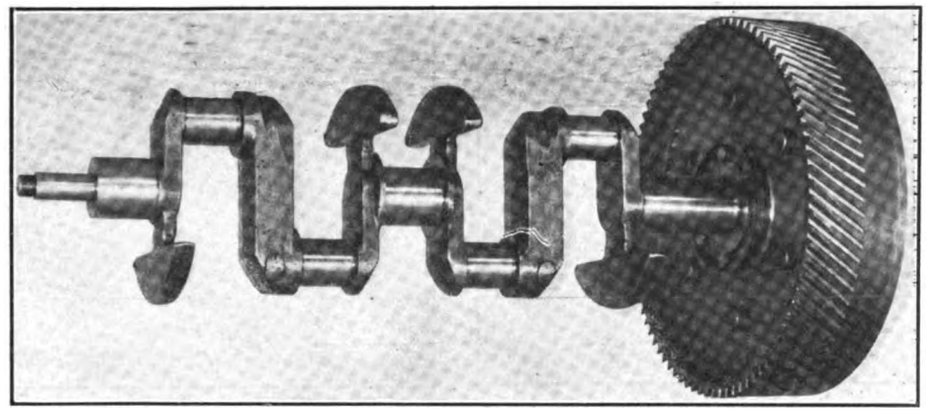
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tary or dynamic balance. It is in rotary balance and also dynamic balance without these. They are added to eliminate the stress on the bearings due to centrifugal force in the shaft at speeds above 1,200 r. p. m. It has been found in high-speed motors that at continuous speeds above this point the bearings are apt to give way, due to pressure not from the explosions in the cylinders, and not from the actual weight of the crankshaft and other parts carried, but to irregular, centrifugal force on the shaft, caused by the crank pins. This can be explained by the homely comparison of swinging a weight attached to a string around your hand. The faster you swing the weight the stronger is the tendency for it to pull away from your hand. With a single weight on a swing the pull is always outward in the direction of the weight.

If, however, we arranged two weights, one diammetrically opposite the other, and then swung them in a circle, the centrifugal force of one would neutralize that of the other. This is what the counter-weights are used for. By neutralizing this centrifugal force inherent in the shafts without the weights, the wear on the bearings due to this cause is eliminated.

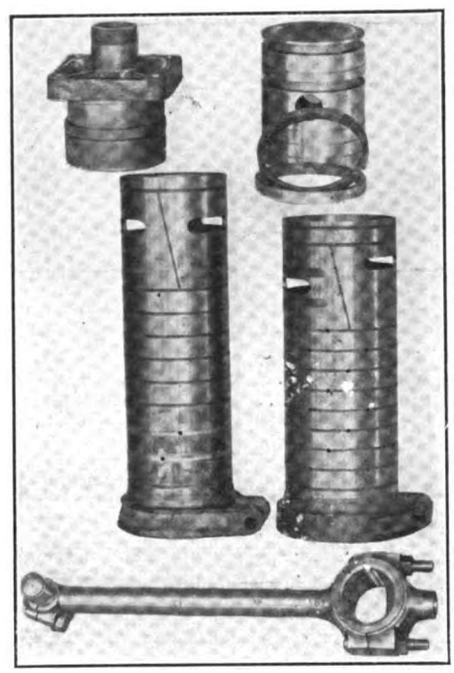
Another factor in this high-speed motor which has been carefully worked out, is that of the tubular connecting rod. These rods are lighter than the I-beam type, an object desired in high-speed motor work, and on the connecting rod cap is a short stub tube which is used to assist in getting better balance in the motor.

Pistons are cast iron with considerable length and slightly concave on top. The two rings are carried above the wrist pin and the piston has considerable wearing surface between these rings which is used to prevent slapping and give a quieter motor. Each piston groove contains three rings, a broad inner one and two narrower ones outside of it.



The heavy crankshaft is counterbalanced to eliminate stresses. Spiral gear teeth are cut for the starting motor drive

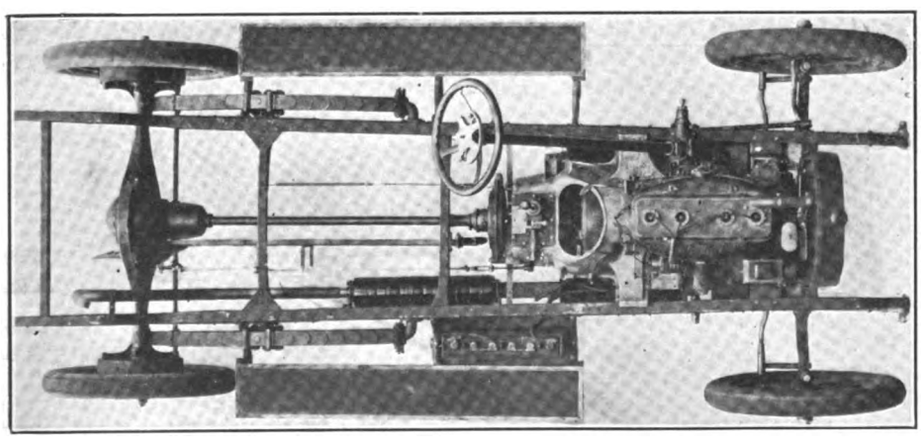
As in all other Knight motor types, two reciprocating sleeves are used, these being cast iron with the usual grooves for lubrication and two sets of ports at the upper end of each sleeve, the ports on the one side for the exhaust and the opposite for the intake. These sleeves have a total reciprocation of 1 inch and are driven by short connecting rods from an eccentric shaft.



Cylinder head, sleeves, tubular connecting rod with gudgeon pin, piston and piston rings

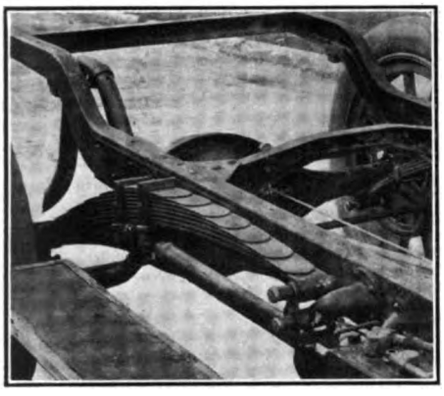
For the first time the Stearns company has eliminatted the system of motor lubrication in which movable troughs are used, one under each connecting rod. Instead, a non-splash system is used with varying pressure to all of the crankshaft, crankpin and wristpin and eccentric bearings, and the mist or splash to the sleeves and other parts. The oil pressure is interconnectetd with the throttle, so that at normal speeds of 15 miles per hour the oil pressure is 20 pounds, yet when the throttle is open there is an increase in pressure until 60 pounds is reached, at which point there is a safety valve which prevents a higher pressure. The prime object of this lies in the fact that a constant film of oil is desired in all of the bearings all the time. This is considered particularly essential with high-speed motors.

The oil system is conspicuous in that the parts are largely external. The gear pump is located externally at the front of the motor, where it is driven direct from the eccentric shaft. It draws its oil through an external pipe from the crankcase base and delivers it through another external pipe to a large cylindrical filler chamber on the left front of the motor. From this filler the lubricant flows through a 7/8-inch pipe incorporated in the crankcase and having branches to the three bearings of the crankshaft as well as to the forward end of the eccentric shaft and also to the water-pump shaft. The crankshaft is drilled so that oil is forced direct to the crankpins and lower ends of the connecting rods, and thence through the hollow connecting rods into the hollow wristpin. The wristpin has brass end plates to prevent an excess of oil flowing out

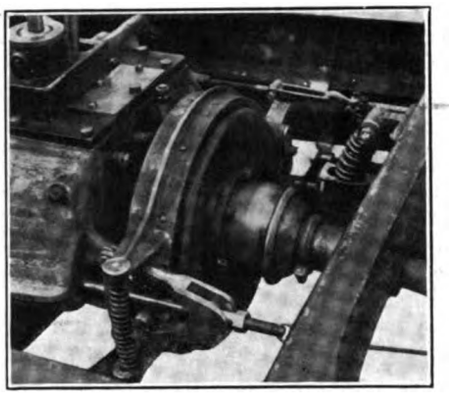


Substantially the whole chassis is built in the Stearns factory, including rear axle, motor and carburetter. Rear springs are cantilever

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The cantilever rear spring has thin, wide leaves



Heavy construction is employed in the foot brake back of the gearbox

against the sleeves and thus causing smoking.

Still another interesting feature in the oiling system, to prevent smoking from too much oil rising through the connecting rods and escaping through the wristpins, is that a small hole is drilled near the lower end of the hollow connecting rods. This lets a certain amount of the oil escape and so reduces the pressure of oil in the wristpin.

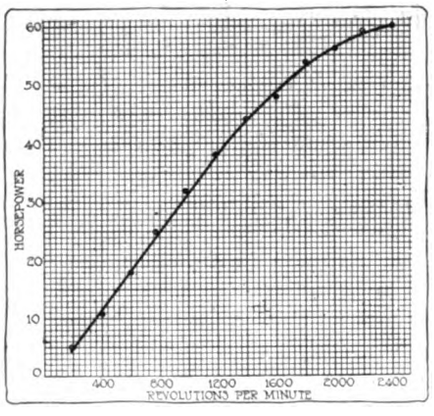
The Bosch high-tension magneto gives a single ignition system with one set of plugs and wiring reduced to the minimum. Starting and lighting are cared for by a Gray & Davis starting motor and a Gray & Davis generator. The starting motor, located under the right rear motor arm, where its engaging pinion meshes with spiral teeth on the flywheel, is geared 30 to 1 to the crankshaft and is capable of spinning a cold motor 84 r. p. m. The generator for the lighting system is mounted at the right front where it is driven by silent chain from the pump and magneto shaft. It has a ratio of 3 to 1 and starts charging the battery at 12 m. p. h.

The complete system is a 6-volt one with an 80 ampere-hour Willard battery in which the three cells are placed in line, thereby giving a battery case that can be suspended on the right of the chassis between the frame and the runningboard. The clutch incorporated in the flywheel is a leather-faced cone with springs operating under the facing. The reverse position of the cone, which moves backwards to engage instead of forward, has been used solely to simplify the disengaging connection.

Three forward speeds are afforded in the gearset, which is compactly housed in the extension of the casting forming the crankcase. There are end plates for carrying the bearings. Double row annular ball bearings are used for the main shaft and Hyatt bearings for the countershaft, reverse shaft and where the forward end of the main shaft is supported within the pinion from the shaft connecting with the clutch.



Inside of cabriolet, which sells for $2,250, showing driver's seat forward of the main seat



The new Stearns-Knight motor is of high-speed design and develops 60 h. p. at 2,400 r. p. m.

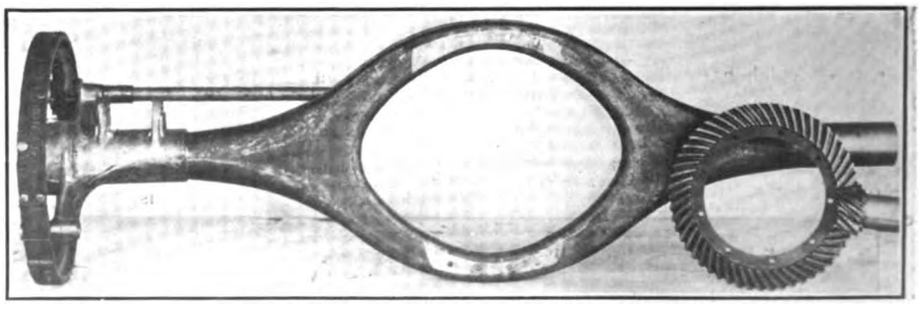
Power is conveyed from the gearbox through the propeller shaft having a single universal joint at its forward end. Instead of conventional bevel gears in the rear axle, the spiral bevel is used.

The rear axle is a new design with the Stearns company in that the stationary portion is a diamond-shaped steel stamping with an opening in the diamond into which the differential housing is secured. In external appearance the axle is not unlike the present one used in Stearns cars, but is lighter due to the stamping. The stamping is reinforced towards its outer end by seamless steel tubing inserted within the stamping which is formed into a tube at these points.

An innovation in the brake arrangements is the location of the service brake on a drum immediately in rear of the gearbox. This drum measures 10½ x 2 inches and is so located as to be practically over the large rear bearing of the main shaft of the gearbox on which it is carried. The contracting bands faced with fiber are brought together by a wedge-shaped piece which is drawn forward by a horizontal rod which passes through a tube in the gearbox and at its forward end couples direct with the pedal, giving a very direct brake pull.

The emergency brakes are expanding malleable iron shoes which bear on pressed steel drums attached to the rear wheels. These drums are 7/32-inch stock and measure 15 x 1½ inches.

The use of the cantilever spring is new with the Stearns company. The springs are shackled at their forward ends, have a pivoted bearing support on the frame at their centers, and at the rear fit to a bolt beneath the axle. The leaves are 2½ inches wide and the springs measure 50 inches in length. The pivoted central support is not exactly in the center but positioned 23 inches from the front end and 27 from the rear. The drive of the rear axle to the car is through the long leaf of the spring rather than through radius rods. A pressed steel torque member parallels the propeller shaft and has the usual front end support.



Stamped steel rear axle of Stearns make with opening for gear housing. Driving gear and pinion are spiral bevels

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COUPELET AND SEDAN NEW FORD ENCLOSED MODELS

Former, for Two Passengers, Lists at $750, and Sedan, for Five Passengers, Costs $975—Chassis at $410

The Ford Motor Co. is going after the closed car business more strenuously than ever by offering a coupelet and sedan on the regular Model T chassis. Prices are $750 for the coupelet and $975 for the sedan. The other closed car model, the town car, is continued at $690.

At the same time chassis without body will be furnished for $410. These may be used either by fitting delivery or other commercial bodies or special bodies. Heretofore when a customer wished only a chassis, the dealer has been obliged to purchase either a runabout or a touring car and remove the stock body and hold it until he could obtain a purchaser to take it off his hands.

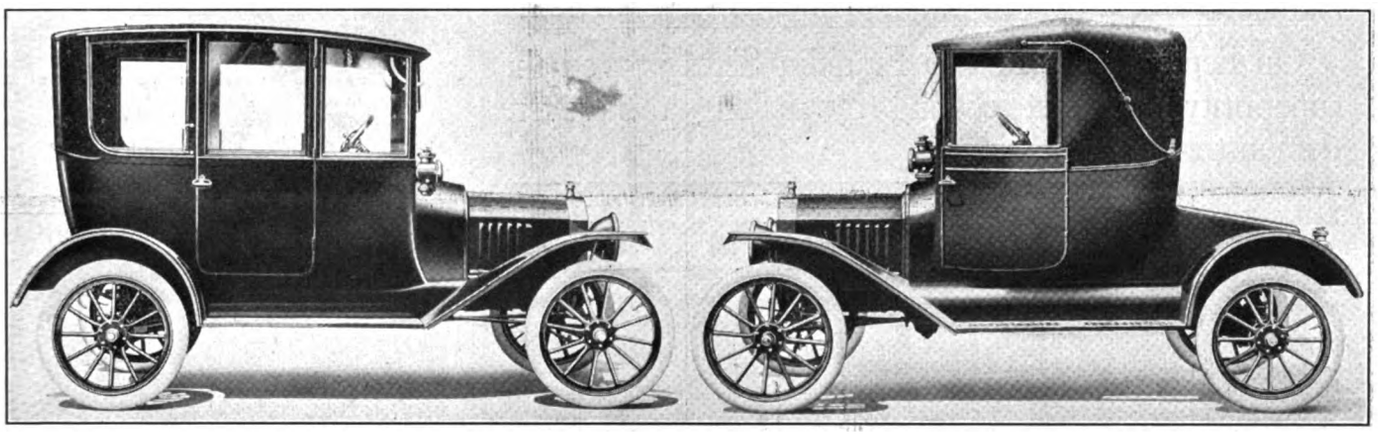
The appearance of the new Ford closed cars is attractive. Hoods have been provided with gills which add a distinctive touch. This gill feature is not applied to the regular open models, which remain the same as they have been for the time being at least.

The coupelet is of the regular convertible type which has become so popular. The top may be folded back to make substantially an open runabout of the car, while when the top is raised and the door windows in place, it is completely closed in similar to a coupe. The top is of genuine leather and the lines of the body such that it should make a strong appeal. The seat is broad and wide and has deep upholstery, while doors are roomy, with the glass in a sliding sash and slipping down into the panel, thoroughly protected. Triple hinges are fitted to the doors to assure alignment.

The windshield is of special design, being double ventilating, the top section swinging outward or inward, while the bottom section swings only outward. When closed both sections are rigid. The entrance to the rear of the body is by hinged tailboard, lifting from the bottom, providing room for a suitcase, inflated tire or other articles. The cowl connects the hood to the dash in graceful line.

The sedan provides seats for five. The rear seat has room for three, while there are two individual seats in front. The right front seat is on a pivot and folds back out of the way when not in use. Upholstery is of cloth.

There are two wide doors which open to the front, with triple hinges as in the coupelet, while an attractive windshield is also fitted. This has three sections, two at the top and one at the bottom, the driver getting plenty of air in bad weather while still protected. As in the coupelet also, the cowl slopes to the hood. Curtains of roll type are fitted to the windows, and the glass in the doors may be dropped by means of straps. The glass has no sash or woodwork around it. Deliveries on the coupelet will commence about October 1 and on the sedan about November 15.



The Ford coupelet which provides accommodations for two passengers sells for $750. The sedan has seats for five persons and sells for $975

161,353 Registrations in N. Y. State

$1,462,963.86 has been paid to New York state up to September 8 in fees for the registration of motor vehicles and chauffeurs' licenses. This is nearly $200,000 in excess of the amount contributed for the same purpose during the whole of last year. To September 14, 161,353 motor vehicles have been registered. This is an increase of 36,090 over the corresponding period last year. The number of chauffeurs licensed is 61,398. During all of last year there were registered only 132,450 motor vehicles; 56,702 chauffeurs were licensed.

Wood Heads California Truck Club.

At the annual election of officers of the Motor Truck Club of California, W. T. Wood was elected president; G. E. Tracy, vice-president; H. C. Ingils, treasurer; H. H. Hite, secretary, while T. N. Sinsabaugh, N. N. Priver, T. F. Whalen, J. L. Pike and H. S. Weisbaum were named members of the board of directors.

Standard Welding Adds Third Building

The Standard Welding Co., Cleveland, O., is building the third large addition of the year to its plant. The newest structure is of structural iron, with corrugated asbestos, metal reinforced roofing and siding. The dimensions are 60 feet by 240 feet by 30 feet high. It is to be devoted entirely to the storage of rims and will accommodate approximately 100,000 rims of various types.

F. C. Blanchard Visits California Dealers

Assistant Sales Manager F. C. Blanchard of the Firestone Tire & Rubber Co. has been visiting the Firestone branches and agents in California and is going to Utah and then to other states. He is making a thorough investigation of the tire business and how the various agencies and branches are working and can be improved to give the maximum of service to Firestone users.

Libby Out of Drouet & Page

E. B. Libby has severed his connection with the Drouet & Page Co., New York city, and has joined the selling staff of the Singer Motor Car Co., Long Island City.

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116 FRANKLIN DEALERS MAKE 100-MILE TEST ON LOW GEAR

(Continued from page 6)

Los Angeles, Cal., dealer negotiated what is considered to be tthe hardest climb in the state and finished at the top of Wilson's Peak at an altitude of 5,800 feet.

The feature of the demonstration which made it of particular value to dealers was that for weeks prior to the day of the test it was well advertised not only in local mediums but also in national periodicals. Dealers were supplied with "copy" by the factory and urged to run it in local papers and to display it in their salesrooms. In a great many cases, those who participated in the test took the opportunity to organize an owners' parade through the city in starting on their demonstrations.

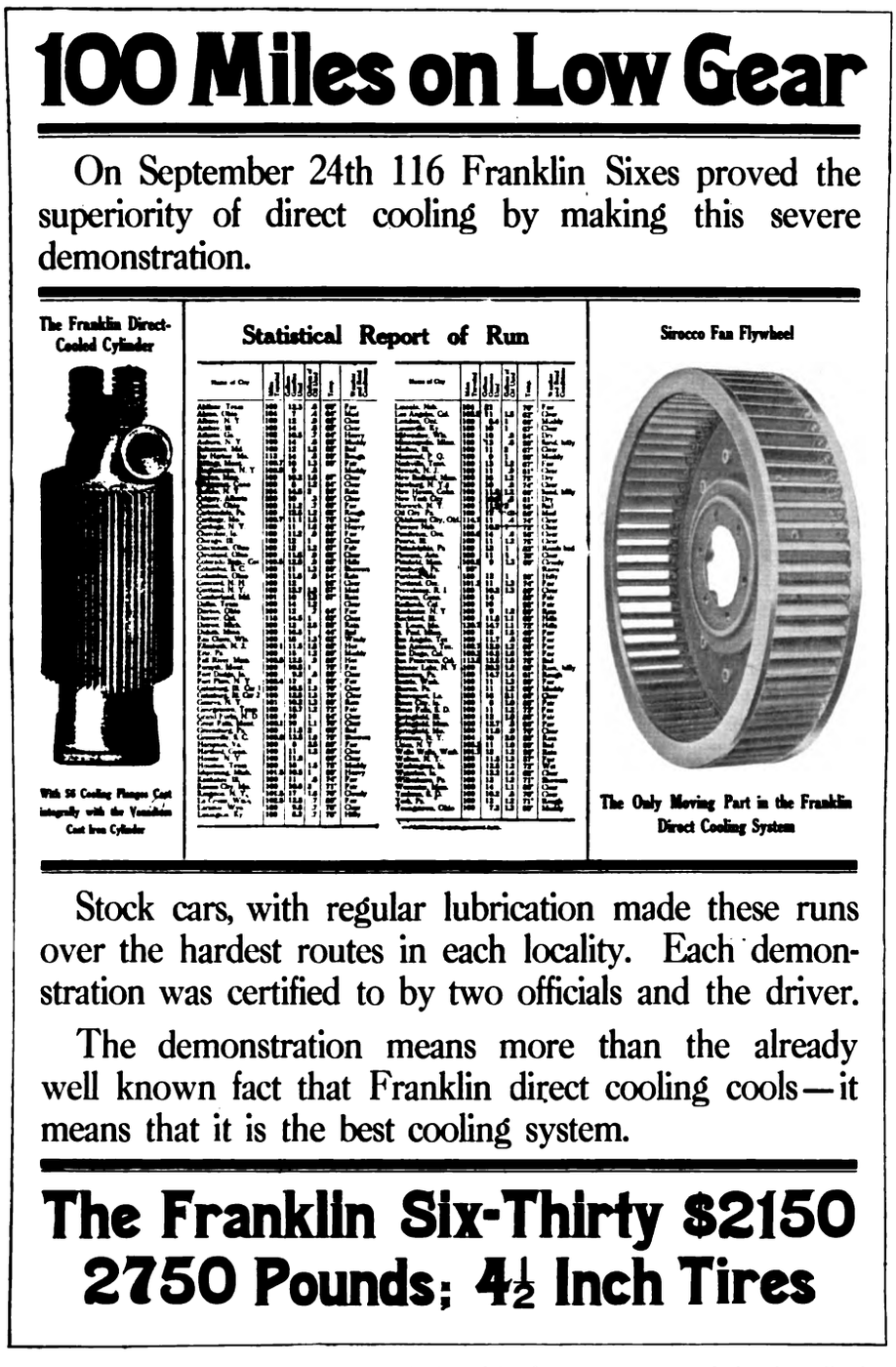
The advertising "copy" that was supplied by the factory consisted of four pieces, one to be run about one month before the run, a second to be run a few days prior to the test, and a third, which is reproduced herewith and which is a large poster measuring 25 x 38 inches, which was hung up in every Franklin salesroom immediately after the demonstration. A fourth piece of "copy" was for insertion in the local papers.

The cars that were used for the test were stock demonstrators, and in making the 100-mile run on low gear their engines turned over the equivalent of 336 miles on high gear. The rules which governed the demonstration are as follows:

1. Run to be made in the Franklin Six-Thirty touring car, roadster, sedan coupe or Berlin. (Roadster and coupe to be used only where impossible to obtain other cars, as but one observer can be carried.)
2. Run to be made Thursday, September 24, regardless of weather and road conditions, and to start at 8 o'clock A. M.
3. The run to be supervised or observed by two or more disinterested persons, one or more to be representatives of the press and one to be an officer of the local automobile club if possible.
4. The run to be attested before a Notary Public per form herewith.
5. Record to be made of time run starts and ends.
6. Car to be absolutely stock and have no special attachments, adjustments or arrangements of any kind.
7. Engine to be kept running throughout the demonstration.
8. Cooling system is not to be touched or supplied with anything during the run.
9. Engine to depend entirely on normal lubrication. No oil to be supplied during the run and no oil to be put in the gasolene.
10. Check speedometer reading and set trip register at zero at the beginning of the run in order to be sure of making 100 miles.
11. Hood not to be raised during the run.
12. Drain out all the oil before the run and measure the oil you put in. Then measure the oil left at the end of the run and report amount used.
13. Fill the gasolene tank full. At the end of run drain tank and report the amount used.
14. Run to be accomplished within 10 hours from the start.
15. Speed to average for the 100 miles not less than 10 miles per hour. To do this, maintain a speed between 10 and 13 miles all the time.

Note: A time limit of 10 hours is made in order that there can be no charge of favoring the engine by slow running. In going 100 miles on low gear in 10 hours, each cylinder fires the same number of times as in going 336 hiles on high gear.

Each dealer was left to choose his own route and those who accompanied the car. G. A. Tisdale, New York distributer, started his run by a tour of the principal business streets of the city. From the salesrooms at 73rd street and Amsterdam avenue, the car was run down Broadway to Brooklyn Bridge, around the City Hall and up Broadway again to the salesroom. Thence the route led out over Westchester County roads to Stamford, Conn., and return over a circuitous way, which included hills and level stretches as they were met. Those who rode in the car were John Major, driver; Stanley P. McMinn, Motor World; Wm. E. Severn, Brooklyn Eagle; J. M. Boyle, Evening Telegram. Part of the time A. G. Perretz, of the Franklin company, was a passenger and part of the time Tisdale himself sat beside the driver.



This is one of two posters, 25 x 38 inches, distributed by the company among dealers immediately following the run, enabling them to get the results before the public while the time was opportune

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ONE SIX AND ONE FOUR IN LATEST DAVIS SERIES

Larger Four Dropped and Six Continued With Many Refinements—Six to Have 4-Speed Gearset—All Bodies of New Design

Two chassis models, one a six and the other a four, will constitute the new series of Davis cars manufactured by the George W. Davis Motor Car Co., Richmond, Ind. The previous series consisted of three cars, two fours and a six. The four of the new line is a compromise between the older fours, and the six is a continuation of the former design without radical changes.

The price of the six is $2,150 with five-passenger body and $2,185 with six-passenger body, the figures being the same as before though the bodies are of entirely new and improved design. All models have full equipment, the list being headed, in the case of the four, by the Westinghouse two-unit electric lighting and starting system. The electrical equipment for the six has not been decided upon.

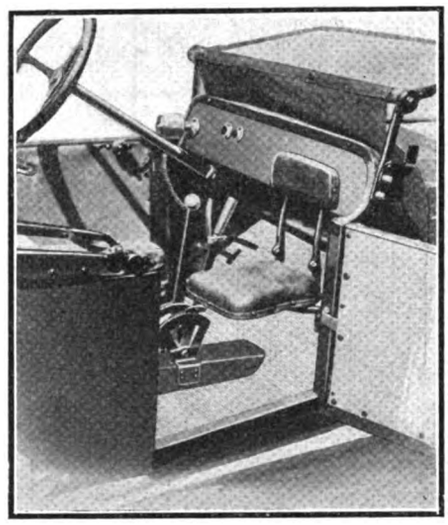
A Continental unit power plant with block-cast L-head cylinders 3¾ x 5 is installed in the four; the previous fours had cylinders 3½ x 5 and 3¾ x 5¼. The unit is hung on a three-point suspension. The Westinghouse starting system of the four is fitted with the Bendix automatic gear control for the starting motor pinion. The incorporation with the Westinghouse system of the ignition coil has changed the layout of the instrument board somewhat; the coil formerly was on the dash, but now is under the engine hood.

In the four a change has been made from disk to cone clutch, and while thermo-syphon cooling still is used, the rounded form of the new radiator gives additional cooling surface; the radiator is of the vertical tube type. The Stromberg carburetter is continued, but it is of the new type E in which all air is preheated, and much is expected of it in the way of economy and efficiency. The tires have been increased from 33 x 4 to 34 x 4.

Though some of the details of the six-cylinder model have not yet been determined, it will have a Continental motor with cylinders 3¾ x 5¼ cast in threes, Stromberg Model G carburetter, disk clutch and Warner four-speed gearset on Rhinelander ball bearings. The lighting-starting system is still undecided; but ignition will be by a Bosch dual system, a Willard battery forming part of the installation. Tires will be 37 x 4½ and the wheelbase 123 inches. The steering wheel will be on the left and the control levers in the center. Running-boards will be clear of obstructions.

NEW FOLDING SEAT ADDED IN LATEST SAXON MODELS

An extra seat which provides accommodation for a child is offered as an extra in the new model Saxon cars built by the Saxon Motor Car Co., Detroit, Mich. The seat is of the armless folding type and is pivoted just forward of the door on the right side of the car, facing the front seat, which holds two adults. When not in use the seat may be closed against the side of the car, and whether in use or not, does not interfere with the comfort of the occupants of the main seat. An extra charge of $10 is made for the seat.



Saxon auxiliary seat unfolded

Bower Bearing Quarterly Dividend

The Bower Roller Bearing Co., Detroit, Mich., has declared its regular semi-annual dividend of 5 per cent.

Crescent To Add $985 Model

George A. Root, president and general manager of the Crescent Motor Car Co., St. Louis, Mo., has resigned and is succeeded by M. W. Bond, of the Bond Automobile Co., who has acquired the stock formerly held by Root. At the same time, John B. Howard has been appointed sales manager. The company is now arranging to bring out a small four-cylinder car which will sell for $985 with full equipment, including electric starter.

PILOT DROPS SMALL FOUR AND ADDS NEW LIGHT SIX

Two Former Sixes Continued Without Radical Changes—T-head Motors in All Cars—Right or Left Steer in Larger Models

There will be no fours in the new series built by the Pilot Motor Car Co., Richmond, Ind.; the four which was one of the last series has been dropped and its place taken by a light six which is new throughout. The new car is Model 55. Models 75 and 60 are continuations of the sixes of the previous series.

The new six is built as a roadster and five- and seven-passenger touring models; the roadster and five-passenger sell for $1,885 and the seven-passenger for $100 more. The wheelbase is 126 inches and the tires 34 x 4 front and rear. Spring suspension is of the cantilever type. The motor is block cast, T-head, 3½ x 5¼.

Of the continued cars, Model 75 has a motor of the same general type as that of the light six, but the bore and stroke are 4½ x 6; the wheelbase is 132 inches and the tires 37 x 4½. Roadster and five-, six- and seven-passenger bodies are mounted, the price being the same for all—$2,885.

Model 60 differs from the other chiefly in the motor bore and stroke, which are 4 x 6, and in other matters of detail; it is built as a roadster or seven-passenger touring car at the same price—$2,585.

Features that are common to all the cars are the T-head Teetor motor, cone clutch, three-speed gearset, floating rear axle, Westinghouse starting and lighting system and optional finish. The new model has left steering and center control; the older cars offer choice of right or left steer, both having center control.

The use of cantilever springs in the new model is an innovation so far as the Pilot company is concerned, previous models and both the continued cars having semi-elliptics. In all cases the springs are of English Sheffield steel. Full equipment is standard, and the top may be of the one-man type or otherwise. In the case of Model 75, the biggest machine, Westinghouse air springs are offered as an extra at $250.

Gray & Davis Quarterly Dividend

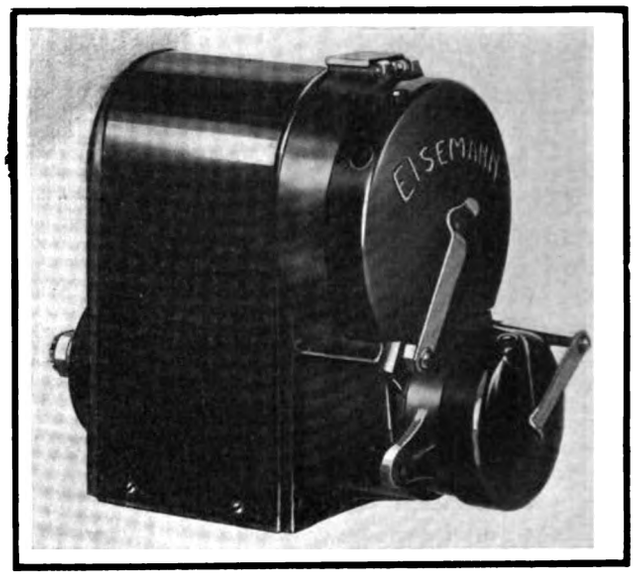
Gray & Davis, Inc., Boston, Mass., have declared a regular quarterly dividend of 1¾ per cent, payable Oct. 1.

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New Eisemann Magneto Has Simple Breaker

Waterproof Instrument Delivers Intense Spark at Low Armature Speeds

Straight High-Tension System for All Motors Uses No Starting Batteries.



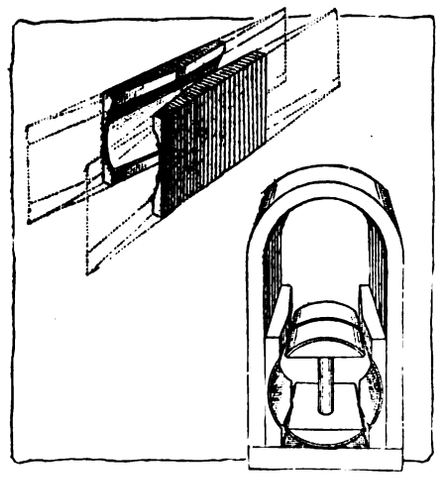
The new Eisemann waterproof magneto is simple and compact. High tension leads enter tapered holes and fit tightly so that moisture cannot enter. All of the vital parts are at one end and are exposed by removing distributer cover and breaker box

The Eisemann Magneto Co., Bush Terminal, Brooklyn, N. Y., has placed on the market a new waterproof magneto which is styled Type G and which differs in a number of material respects from all other Eisemann magnetos. The new instrument is of the straight high-tension type, no provision being made for battery ignition. It is made for both four- and six-cylinder motors of all sizes. It is chiefly remarkable for its extreme simplicity, the fewness of its parts and the intensity of the spark which is produced at exceptionally low armature speeds.

In appearance the new instrument is quite different from its predecessors. It is exceptionally smooth and compact. The magnets are covered by a sheet steel housing which is pressed into place in such a way that the joints are perfectly tight. The distributer housing is smooth, the terminal connections being inside. In fact, the whole instrument is infinitely simpler in both construction and appearance than the older types of Eisemann magnetos.

In construction, the magnets are essentially the same as have been used in the past. Due to a more efficient winding of the armature, however, it has been found unnecessary to use double magnets. The distinctive Eisemann pole piece construction is retained. It is largely due to this construction that a strong hot spark is obtained at very low armature speeds. The pole pieces themselves are in the form of wedges with their thickest parts at the center of the armature, as is shown by the accompanying illustration; consequently the armature is at no time isolated entirely from the pole pieces.

This construction causes the magnetic lines of force to be drawn from the extremities of the pole pieces toward the center of the core, which results in the entire volume of the magnetic lines of force passing through the winding without being diffused. In addition, this construction makes possible a somewhat

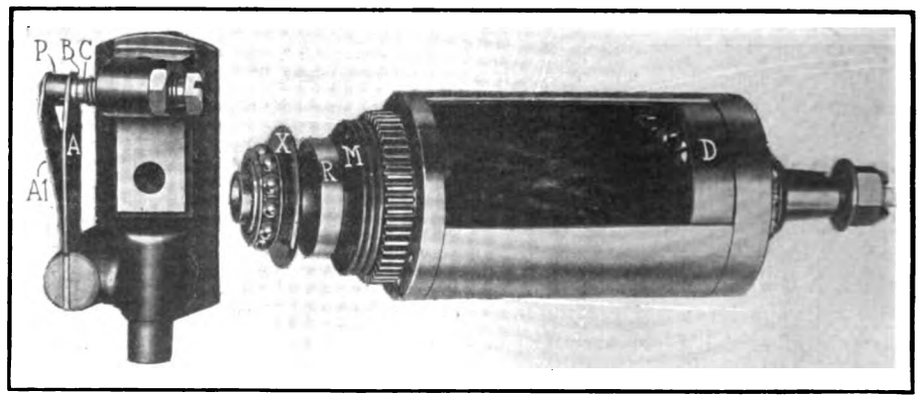


The Eisemann pole pieces are wedge shaped so that the armature is never completely isolated from them. Their form insures the strongest magnetic influence going through the center of the winding

wider range in timing the spark; furthermore, the armature acts as a keeper for the magnets.

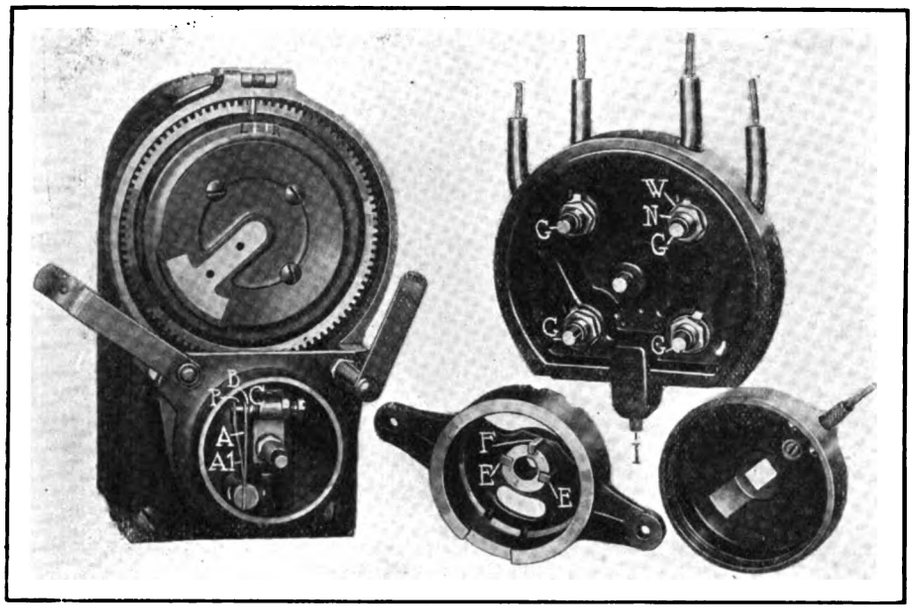
Although the armature winding in the new instrument is practically unchanged, long experiment coupled with experience has produced a more efficient proportion between the secondary and the primary. At the same time the current collecting slip ring has been shifted to the end opposite to the end it occupies in other Eisemann instruments. This change has resulted in bringing all of the vital parts of the instrument to one end, where they are all readily accessible by the simple expedient of removing the distributer housing and the breaker box.

In designing the new armature a much greater factor of safety has been allowed for. Instead of being placed between two closely spaced insulating rings, the slip ring (R) has considerable space between it and the insulating material at either side. At the gear end this insulating ring (M) is very thick, and in order to obviate the possibility of the spark jumping to the gear in the case of a disconnected high-tension lead, the insulating ring is deeply corrugated; thus its thickness is proof against the possibility of the spark piercing through and the



Eisemann Type G breaker mechanism and armature. The slip ring (R) is well insulated and the condenser (D) is completely enclosed and thoroughly protected

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Distributer and breaker box removed showing high tension lead connections and simplicity of breaker mechanism. The spring (A) wipes against fiber inserts (E) opening the contacts

corrugations prevent the spark jumping across the top.

The insulating ring (X) at the opposite side of the slip ring is similar in form to that ordinarily used but is slightly thicker and there is considerable space between it and the ring. The slight change in wiring has permitted the use of a smaller and more compact condenser, which is housed in such a way that injury, except by direct intent, is practically impossible; otherwise the armature is standard, the core being built up of T-shaped castings pressed together with a quantity of laminations directly in the center where the magnetic influence is strongest. After winding, the armatures are shellaced and placed in an oven at 180 degrees Fahr. This process is repeated three times.

The circuit breaker is entirely new. Instead of being a comparatively heavy arm there is a very light spring (A) which carries one of the platinum contacts (B) and which rotates with the armature shaft; the other contact (C) is mounted in the part which supports the spring.

The auxiliary spring (A 1) is merely for the purpose of slightly increasing the pressure between the contact points; it is separated from the main spring by a fibre plug (P) in order to eliminate the possibility of trouble resulting from static conditions.

Made integral with the breaker box there is a small cylinder with two fibre inserts (E) and a third felt insert (F), the latter serving merely for lubricating purposes.

As the breaker mechanism rotates with the armature the spring (A) wipes alternately against the fibre inserts (E and E) thus making and breaking the primary circuit.

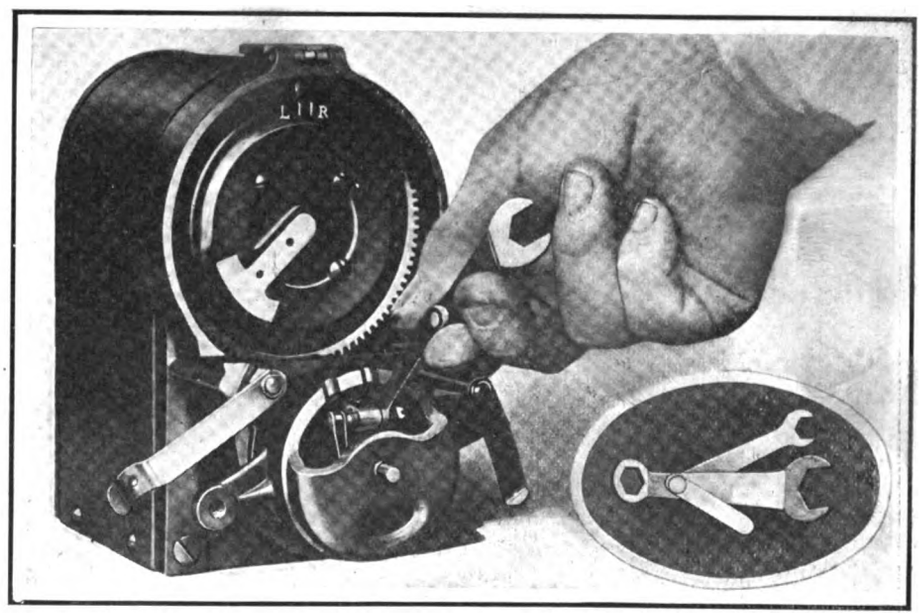
The simplicity of this mechanism is only one of its noteworthy features. As there are no bearings it is impossible for wear to cause irregular firing and as there is nothing to stick, possibility of trouble on this account is positively eliminated. Another very valuable feature is that owing to the exceptional lightness of the parts there is no battering of contacts which, conseqently, may be expected to wear a correspondingly longer time.

The distributer has come in for complete revision. As already has been noted, there are no connections outside. The high-tension leads enter tapered holes in the top of the distributer block, the stripped ends being wrapped around large threaded studs. Over the wire is placed a washer (W), which is tabbed to prevent it from turning when the nut (N) is screwed down. Before the leads are attached they are forced into their respective holes and as they are a tight fit it is impossible for moisture to enter.

The high-tension distributer contacts (G), as well as the ground connection are carbon, light springs being used to insure perfect contact with the distributer arm.

The distributer arm is inserted in the distributer disk, with which is rotates, touching in turn the high-tension lead contacts. The location of the current collecting slip ring in its present position has made possible the elimination of a large number of parts heretofore necessary. The current collecting brush (I) is mounted in the distributer block and is removed with it, exposing the slip ring when the block is taken off. This makes it unnecessary that the current be lead from one end of the magneto to the other, as has been the case in the past.

Another excellent feature of the new instrument is that installation and timing have been simplified to the greatest possible degree. On the distributer gear there are two marks, one for left hand and one for right hand engines. In timing the magneto it is merely necessary to place one piston in firing position and turn the distributor gear until one of the marks, depending upon the direction of the rotation of the crankshaft, is in line with a screw in the distributor covering.



With distributer and breaker box cover removed all the vital parts are exposed. It is a simple matter to make adjustments of the breaker mechanism

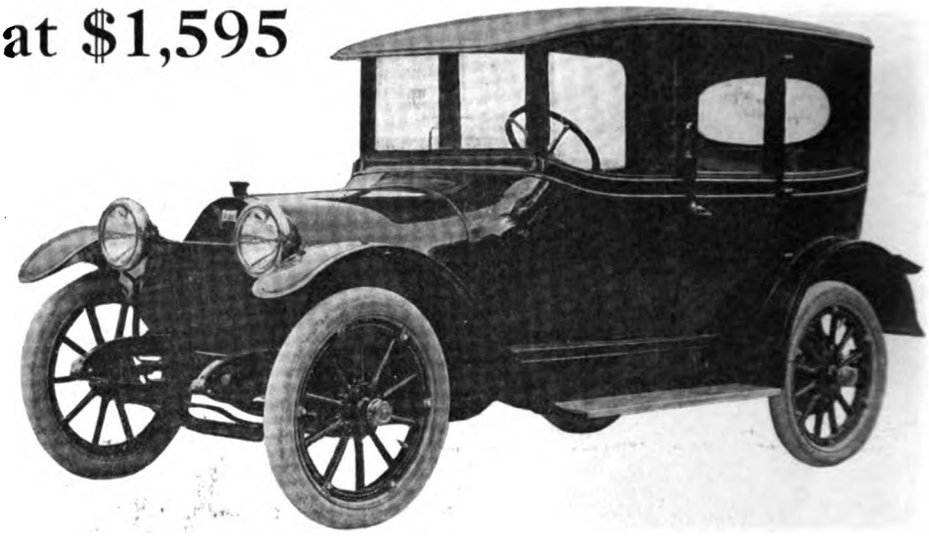
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New Velie Six at $1,595

Small Four Dropped; Larger Four and Six Continued

Spiral Gear Final Drive Feature of Latest Model

Four-cylinder Model Retains Velie Motor



The sedan costs $2,715, is finished in either blue or green and is mounted on the big six chassis, one of the continued models

Three chassis models are included in the latest Velie line, built by the Velie Motor Vehicle Co., Moline, Ill., as was the case last season; but while two of the machines are the older models with such detail improvements as were required to bring them up to date, the third is a brand new one, a light six, which displaces the former small four. The retained models are a big six and a four.

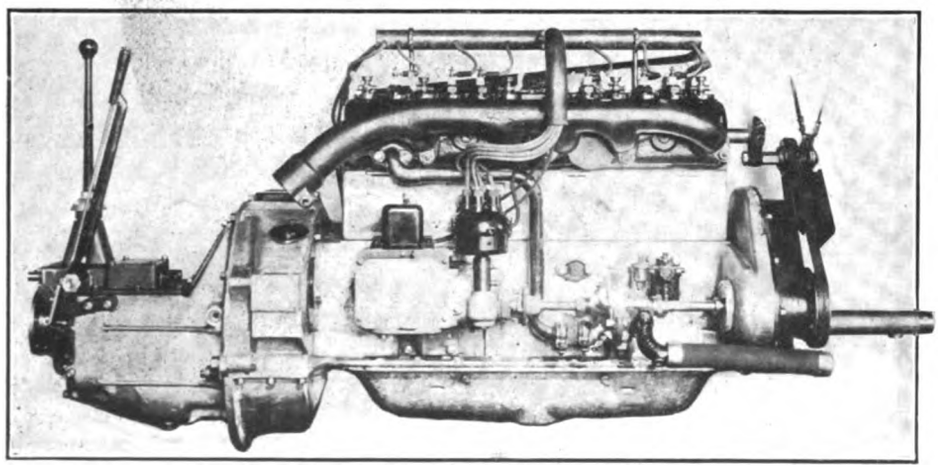
The new small six, designated the Biltwell Series 15, sells for $1,595. The four has been reduced from $2,000 to $1,750 and the big six from $2,350 to $2,015. All the cars have new bodies. The new small six incorporates spiral bevel gear drive to the rear axle, tapered frame and narrow front spring centers, drive through the springs, Stewart vacuum feed and Atwater Kent ignition with automatic spark advance. These are features that were not used on former models.

Besides the ordinary accessories, the new six is equipped with a Taylor Noil tire pump, cutout, which is unusual stock equipment, a windshield with supports fastened to the body sills, auxiliary emergency battery for ignition, double headlights, gasolene gauge, inspection lamp, tire carrier, and electric horn with control button conveniently located in the center of the steering wheel.

CONDENSED SPECIFICATIONS OF VELIE 1915 LINE

	Small six	Big six	Four
Price—			
Touring, 5 passenger	$1.595	$2,015	$1,750
Touring, 7 passenger		2,115	
Sedan		2,715	2,450
Color	Blue or green	Blue or green	Blue or green
Make of motor	Continental	Continental	Velie
Number of cylinders	Six	Six	Four
Shape	L-head	L-head	L-head
How cast	Block	Threes	Pairs
Bore	3½	3¾	4⅝
Stroke	5	5¼	5¼
S. A. E. rating	29.4	33.6	34.25
Ignition	Atwater Kent	Bosch magneto	Bosch magneto
Carburetter	Stromberg	Stromberg	Stromberg
Starting-lighting	Gray & Davis	Gray & Davis	Gray & Davis
Clutch	Cone	Disk	Disk
Gearset	4-speed	4-speed	4-speed
Wheelbase	124	126	121
Tires, front	34 x 4	37 x 4½	37 x 5½
Tires, rear	34 x 4	37 x 4½	37 x 5½
Steering	Left	Left	Left
Control	Center	Center	Center
Make of axle	Timken	Timken	Timken
Type of rear axle	Full floating	Full floating	Full floating

The engine is a Continental, forming a three-point suspended unit power plant with a cone clutch and gearset made by the Warner Gear Co., Toledo, O. Cylinders are block cast, 3½ x 5. L-head.



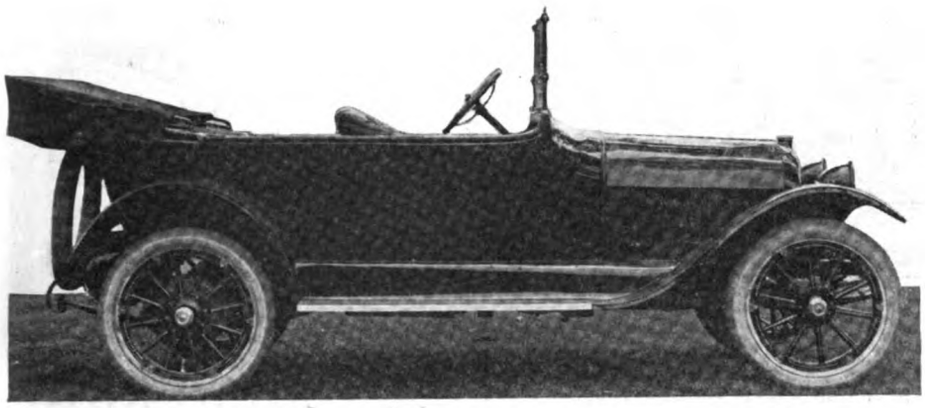
A block-cast Continental motor with cylinders 3½ x 5 is used in the new Velie model

The crankshaft is supported by three bearings and through helical gears operates the camshaft. The valves are 1½ inches in diameter. The oiling system is a combination of circulating splash and pressure, the main bearings being fed directly by leads and the reciprocating parts by splash.

The Stromberg model HB2, 1½-inch carburetter bolts directly to the cylinders; the air intake is connected to the exhaust manifold by a sleeve and pipe. Fuel feed is by the Stewart vacuum system. On the same side with the carburetter is a Gray & Davis 6-volt starting motor driving to the toothed flywheel, and an oil gauge attached to the lower portion of the crankcase.

On the right or exhaust side of the motor is the Gray & Davis 6-volt generator with the regulator installed on top

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Series 15, the new Velie light six, which succeeds the former small four, sells for $1,595

of its casing. Next to the generator is the Atwater Kent distributor, with wires leading from it into a conduit.

The ignition system is fitted with a current-reversing switch the use of which prevents the interrupter points from wearing rapidly and unevenly; this switch is of the rotary type, with four positions instead of two. Two are off positions and the others on.

The clutch is of the cone type with a 2½-inch face with an angle of 12½ degrees. Back of the clutch is a four-speed selective gearset, with a gearcase of the narrow type, in which the countershaft is above the shifter shaft.

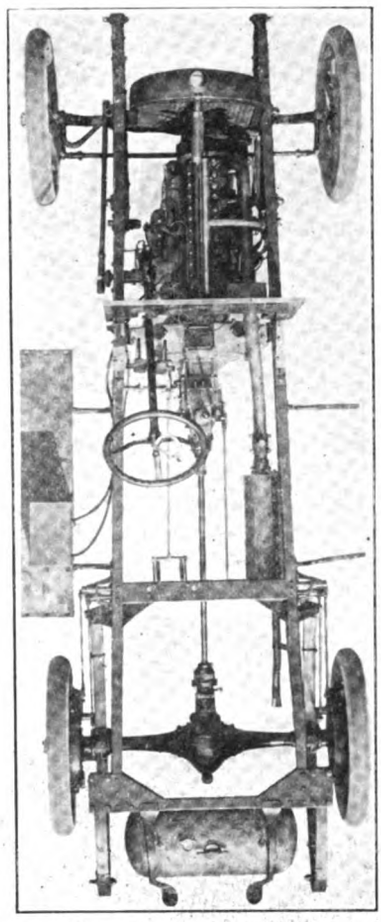
The drive from the gearset is through an open shaft fitted with two Spicer universals to a Timken floating rear axle fitted with spiral-bevel gears.

The new Velie steering post, placed on the left side, has self-lubricating bushings. It is of Gemmer make and has a large horn button at its center. To the right of it is the ball-joint gearshift lever. The ignition system has auxiliary dry cells operated by a switch near the floor boards and within easy reach of the driver's right hand.

Propulsion in this new six is through the springs, constituting what is commonly called the Hotchkiss drive. The main spring leaf is of alloy steel. The front springs are 40 inches long and the rear 52, both having leaves 2¼ inches wide. The wheelbase is 124 inches and the wheels fitted with 34 x 4-inch tires on Goodyear endless demountable rims for straight-side tires. The front wheel camber is 1½ per cent.

The Biltwell body is a good example of the streamline idea. There is a graceful curve from cowl to the rounded radiator; the sides are straight and the back bell-shaped. The symmetry of the car has not been broken up by anything, for the designers have gone so far as to install a 20-gallon cylindrical gasolene tank in the rear.

On the improved six no chassis changes have been made, but the body has been altered; the lines are better and the cowl dash arrangement is slightly different. The rear tires now are of the non-skid type instead of plain tread and a Taylor Noil pump is given as added equipment. The only other change has been in fitting headlight dimmers.



Plan view latest six chassis

The engine in the big six is a Continental, 3¾ x 5¼, with cylinders cast in blocks of three. The engine shows nothing radical, but differs from the small six motor in that it is equipped with a Bosch magneto instead of an Atwater Kent system and the Gray & Davis electric cranking and lighting system is of the larger type.

The engine drives to a disk clutch and four-speed gearset and then to a floating rear axle by propeller shaft fitted with two Spicer joints. The wheelbase is 126 inches.

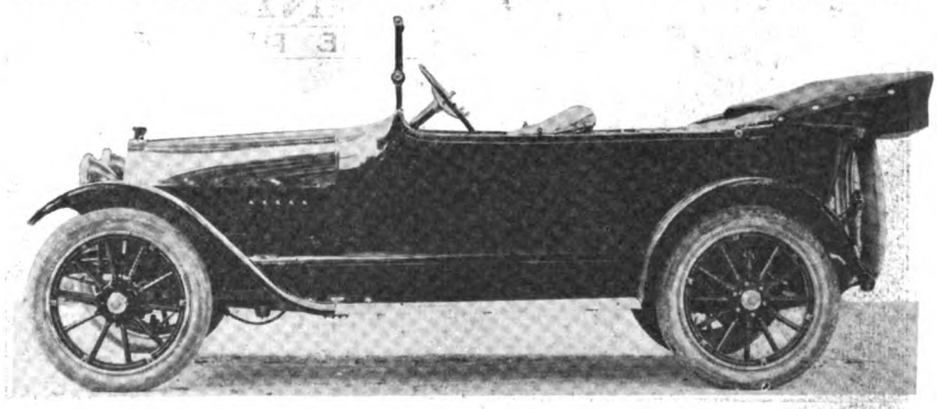
The price of the Velie big six has been reduced from $2,350 to $2,015 for the five-passenger. The seven-passenger costs $2,115.

The carried-over Velie four shows the same general body lines as the other cars and the changes in this are the same as in the big six, with one addition —the increase in tire size from 36 x 4 to 37 x 5½.

This car is the only one using a motor made in the Velie shops. It is of L-head design with pair-cast cylinders of 4⅝ x 5¼ inches bore and stroke. A feature of this engine is the transverse magneto driven by worm gears and set over the timing-gear case. The Stromberg carburetter is on the right side, with its intake pipe passing over the cylinders to the manifold on the left.

The four has a disk clutch and four-speed gearset. The rear axle is a Timken floating type and the wheelbase 121 inches.

The Velie four has been reduced in price, as mentioned previously, from $2,000 in four- and five-passenger form, to $1,750. A five-passenger sedan is sold at $2,450. The latter is finished in blue; touring models are blue or Velie green.



A touring body is mounted on the same chassis as that of the sedan, the big six. The price is $2,015 for five-passenger and $100 more for seven-passenger

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WIDE-AWAKE MERCHANDISING

Pugnacity Is Bad Business

Makes Salesmen and Customers Sore and Is Hurtful—Here's Reason

"What's the matter with Oleo and Street?" inquired a distributer's salesman of a local city salesman in whom he had great confidence.

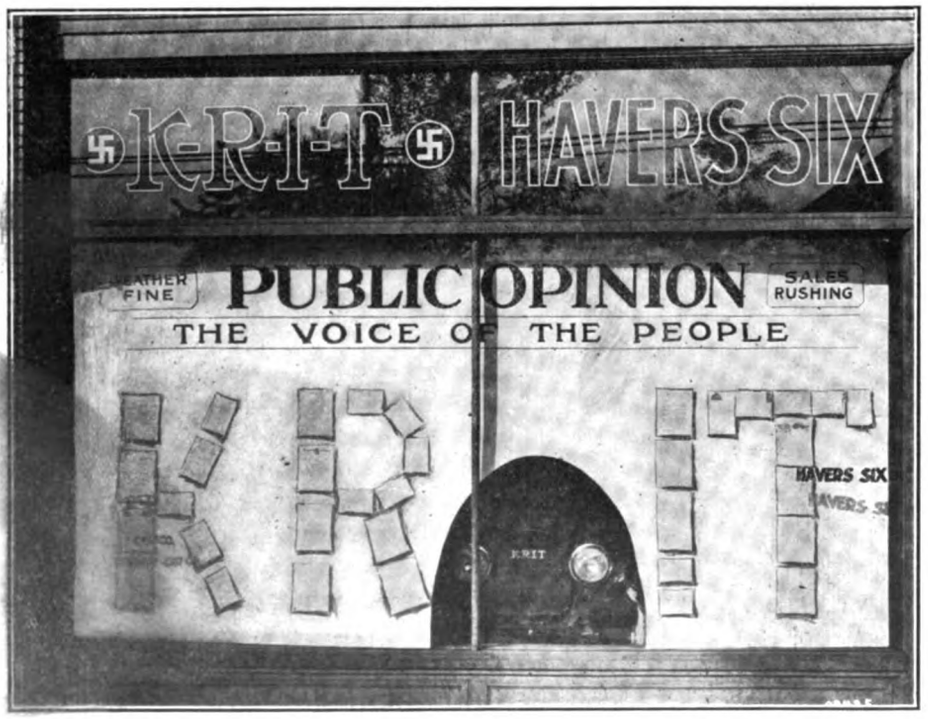
"Oh, they are all right. They sell quite a number of cars. They have a nice place. And they have three good non-competing lines," said the quiet retail salesman.

"I know all that," persisted the distributer's salesman. "What I want to know is why they don't make any money? Why they don't build up a bigger business than they have? Why you don't see more cars they represent on the streets?"

"Do you really want to know? Well, then, I'll tell you. As a business institution they have two big faults. First, they don't always give their customers a square deal. Second, they cannot keep a good salesman. Every good salesman in town has worked for them some time. But nobody sticks. The members of the firm are too pugnacious. They want to mix in everything. And they have a knack of making the salesman sore and making the customer sore. That's their secret. And it is keeping them from making a big success."

If a business concern can keep its employes and build a real organization it has a mighty good chance for the present as well as the future. But if it cannot retain its salesmen for more than a few months "there is a nigger in the wood-pile" and he ought to be smoked out.

Self control that views with patience the mistakes of a salesman and that gives the customer a pleasant answer even when you know he is trying to "put one over" is worth cultivation.



Krit Detroit salesroom's newspaper window announcement

Salesman and Ad Disagree

He Left Out a Lot of Good Selling Points—Do You?

"Last fall after reading an advertisement in the Saturday Evening Post," said Assistant General Manager Olwell, at the recent Chalmers sales convention, "I went into a dealer's store and asked to see a car in which I had become interested through the advertising. I was in that store 45 minutes and in that time the salesman did not tell me a single thing I had read in the advertisement that sent me in there. I was all ready to be convinced if he backed up the things I had read in that ad. But he said so many irrelevant things that when I left the store the advertisement had lost its impression on me.

"That incident made me think that motor car dealers as a whole do not take a close enough interest in the company's advertising."

KRIT DEALER HAS ORIGINAL WINDOW

Detroit Salesroom Front Made Up Like a Newspaper Page

The Krit announcement in Detroit took a novel form. The salesroom window of the Krit Motor Car Co. was made up in imitation of a newspaper front page, the name of the paper being Public Opinion.

The "opinion" or "news of the day" was found in a number of testimonial letters pasted on the page to spell Krit. The nose of a Krit poking through a hole constituted the illustration. The scheme drew attention. Note the realistic weather report in the upper left-hand corner.

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YOU CAN GET CASH—DO YOU?

If Not, Unpaid Bills May Be Repairman's Bugaboo—Try It Out!

Unpaid repair bills, many of them left unpaid for months on some flimsy excuse or another and finally neglected altogether, constitute one of the largest and most prevalent holes in the sieve with which the motor car dealer is supposed to sift his cash returns for traces of profits.

"Yes, it practically takes all the juice out of the business. When we get through the year we don't have a thing. All our profits are tied up in unpaid repair bills," echoes Mr. Sleeper of Couchtown.

"Absolutely unnecessary. You could have your profits in the bank. You could invest them in real estate. You could be turning them over in the sale of more cars. You could really cut out repair bill losses and slow collections entirely if you wanted to," says Mr. Lively, who runs the Wide-Awake Garage and Repair-shop, of Starville.

"You'll have to show **me.** I've been in the business a long time and I never saw it done," retorts Sleeper as he sinks down once more to a restful attitude.

Open Eyes! See Something New!

"Well, you can open your eyes and see something new then if you'll visit the Wide-Awake Garage," says Lively.

"But do you really get cash for repairs?" queries Sleeper.

"We certainly do get cash for repairs, and as long as I am in the business we will continue to get it," remarks Lively.

"How do you do it? Our customers would get mad if we asked them for money right away," says Sleeper mournfully.

"It's a long story. But the main point is that we realized we could not stay in business unless we took some radical action. We figured out that the biggest part of the repair job is labor. And labor won't stay unless it is paid regularly each Saturday night. Our customers took their cars and paid us when they were good and ready and many times they did not pay us at all. Instead they kicked and made things unpleasant.

"The more we thought about it the more we could see that there was only one way out. **That was cash.** It meant treating everyone alike. It meant a more up-to-date repair-shop. It meant a better system of records. And it meant plenty of backbone to stick to the idea once we adopted it. But it meant our salvation along with the rest.

"And so we asked for cash. It was hard. But we explained to our customers that it was the only way. We showed them that it was better for them. It made them more particular about examining the job when they got it. It made us more particular about finishing the job up right. It eliminated that endless chain of come-backs. It put a more systematic plan into our repair-shop so that we hardly ever disappoint a customer on a repair job.

Cash Repairs a Great Blessing

"And now we can go so far as to say that 'Repairs Cash' is the greatest blessing of the business. Never again will we charge repairs. If the man who comes here on suspicion can't see how and why we can do better work for less money on a cash basis we don't want his trade—and we don't need it. We can get along without it.

"That sign—over there in the shop—'All Repair Work CASH' tells our story. And our explanation cinches it. We lose some, of course, but if they can't and won't pay cash we'd rather lose them," And Lively stalked across the store to take an up-to-the-minute reading of the big cash register.

MAKER MUST HAVE GOOD NAME TO WIN

Can't Fool Public With a Lemon Any More, Says Dealer

"If a man thinks he can fool the public with a lemon and get away with it these days," remarked a dealer, "he certainly has another think coming.

"Just saying that a car is big value does not make it so. No one knows that better than the majority of buyers. And the car built by the manufacturer with a reputation for good value sells twice as fast as the other kind.

"Reputation is a live issue in the public mind. Has the manufacturer made good? Not has he made big money, but has he made good with the public? That is the question that is everlastingly at the front.

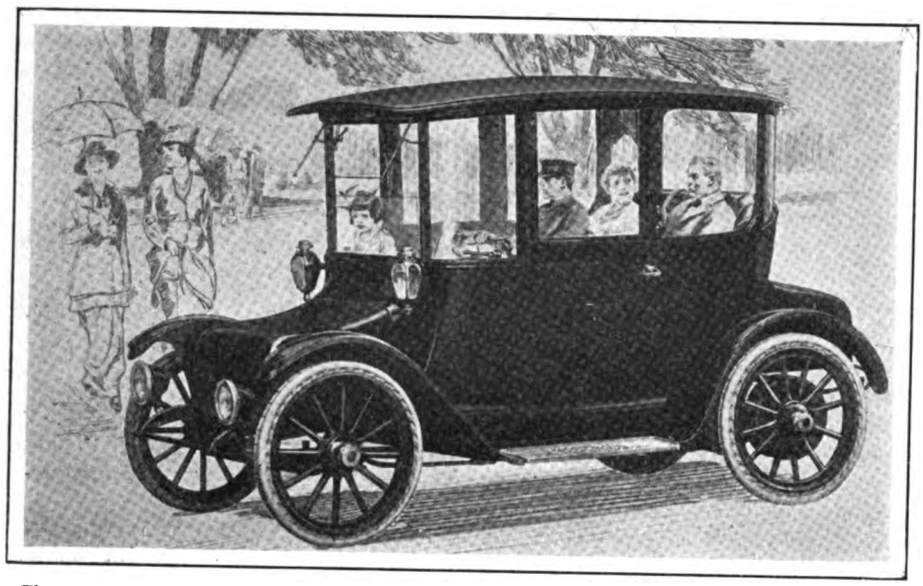
"And until the manufacturer realizes that, he will never create a big demand for his car no matter how much he spends in advertising it."

HARTFORD DEALER'S METHOD IN "ADVANCE PUBLICITY"



This picture shows how the Universal Auto Co., the Franklin dealer in Hartford, Conn., secured advance publicity on the Franklin Automobile Co.'s national 300-miles-on-low-gear. The story appears on one of the first pages of Motor World this week. The manufacturer aided all dealers in advertising but the Hartford dealer went the company's suggestion a little bit better in artistic effect. The company's posters are on the door and window.

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The five-passenger duplex drive brougham at $3,000 may be had with cushion or pneumatic tires and with wood or wire wheels

Few Changes in Detroit Electrics

Six Body Types Mounted on Two Chassis Models and All But Smallest Worm-Driven—Battery Capacity Increased and Options on Wheels and Tires.

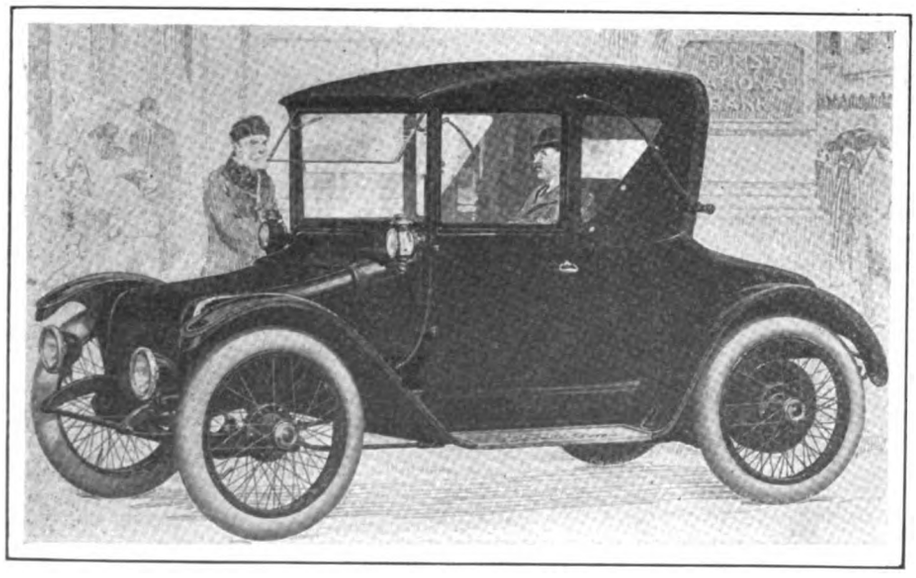
Radical changes have no part in the latest Detroit electric models manufactured by the Anderson Electric Car Co., Detroit, Mich. Minor improvements have been made, according to the suggestions of experience, but that is all.

Of the six body types offered five are mounted on a chassis of 100-inch wheelbase, while one, a four-passenger rear-drive brougham, is fitted to a chassis with 94-inch wheelbase. All models on the longer wheelbase have underhung worm drive and batteries of slightly larger capacities than that of the other model, which is fitted with a bevel gear rear axle.

Prices are practically the same as they were, although due to the greater refinement and finish they are in some cases slightly higher. Model 50 cabriolet is priced at $2,650 with lead battery and $3,530 with Edison battery; model 51, four-passenger brougham, $2,850 with lead and $3,730 with Edison; model 52, duplex drive, five-passenger brougham, $3,000 with lead and $3,880 with Edison; model 53, forward drive, five-passenger brougham, $2,950 with lead and $3,830 with Edison; model 54, rear drive, five-passenger brougham, $2,950 with lead and $3,830 with Edison; and model 55, rear drive, four passenger brougham, with lead battery, $2,600. The last is the 94-inch wheelbased car and corresponds to last season's model 43 selling at $2,550. Model 53 corresponds to the $2,850 car of 1914, while the duplex drive model 52 is the same in price as the one it succeeds of 1914, and so on.

The worm-drive models are the leaders this year, and several refinements have been made in these models as well as in the bevel driven type. Battery capacity has been somewhat increased, and though the number of cells is the same as last year, the number of plates per cell has been increased from 13 to 15 in the case of lead batteries. That is, the 100-inch wheelbase cars have 42 cells of 15 plate type instead of 13 plate, while the 94-inch has 40 cells and also 15 instead of 13 plate.

A new feature of importance is the metal compartment ahead of the motor and accessible through a trap door in the floor, in which is mounted the controller mechanism, brake on the head of the motor, the Klaxette horn, which replaces a bell as a warning signal, the ammeter shunt and the throw-over



The cabriolet, on 106-inch wheelbase, costs $2,650 with lead battery and $3,530 with Edison battery. The mechanical features are the same as those of the broughams

MAIN POINTS OF DETROIT ELECTRIC

Prices:	
Cabriolet	$2,650
4-passenger brougham	2,850
5-passenger duplex-drive brougham	3,000
5-passenger forward-drive brougham	2,950
5-passenger rear-drive brougham	2,950
4-passenger rear-drive brougham (short model)	2,600
Motor	Series
Battery	42 cells, 15 plates
Short model	40 cells, 15 plates
Controller	Continuous torque
Transmission:	
Short model	Bevel gears
Other models	Worm
Wheelbase, short model	94
Other models	106
Speeds	Five
Wheels	Wood
Tires	34 x 4½

Extra: Edison battery.

Options: Goodrich Silvertown cord tires, 34 x 4½, with wood or wire wheels. Motz cushion tires, 36 x 4½, with wood wheels.

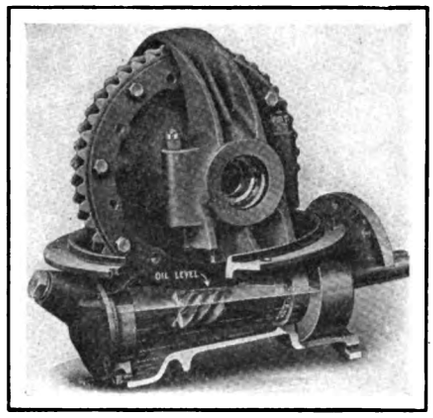
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switch used to change the lighting connections from one half of the battery to the other. These parts are afforded the best protection in this location and are readily reached. The trap door is fastened in and prevented from rattling by rubber rollers. For additional protection the controller has an extra cover of its own which can be removed by loosening two clips. The controller formerly occupied a position under the rear seat. It is only necessary to disconnect the cables and remove three screws when the controller can be lifted bodily through the trap door.

Door windows are sashless and fitted with a convenient type of mechanical lift. Aluminum drip moldings have been placed over the doors to prevent water from dripping upon those entering or leaving the car on a wet day. Door panels are of sheet aluminum with moldings pressed in, eliminating the separate moldings formerly used. The window sash are all metal covered, eliminating checking or warping. Another slight change is in the convexing of the front and rear battery hoods on both top and end to cause the water to run off quickly.

Steering continues to be by means of a horizontal lever mounted parallel with the control lever, the latter being operated by the left hand and is advanced to accomplish both forward and reverse movement of the car. In reversing, the control lever is first brought to neutral position, raised slightly until it comes in contact with a stop, and then advanced in the usual way. When brought back to neutral again after reversing, it automatically drops into forward position.

There are two brake pedals, each of which operates independently a pair of internal expanding brakes on the rear hubs. Between the brake pedals is a third small pedal which operates the emergency cutout switch and sets the brake ratchet. A pressure of the foot on the three pedals at once cuts off the power regardless of the position of the control lever and locks both hub brakes. It is then impossible to release the brakes until the control lever is returned to its extreme backward position. A Yale locking device makes it impossible to drive the car when the mechanism is locked.



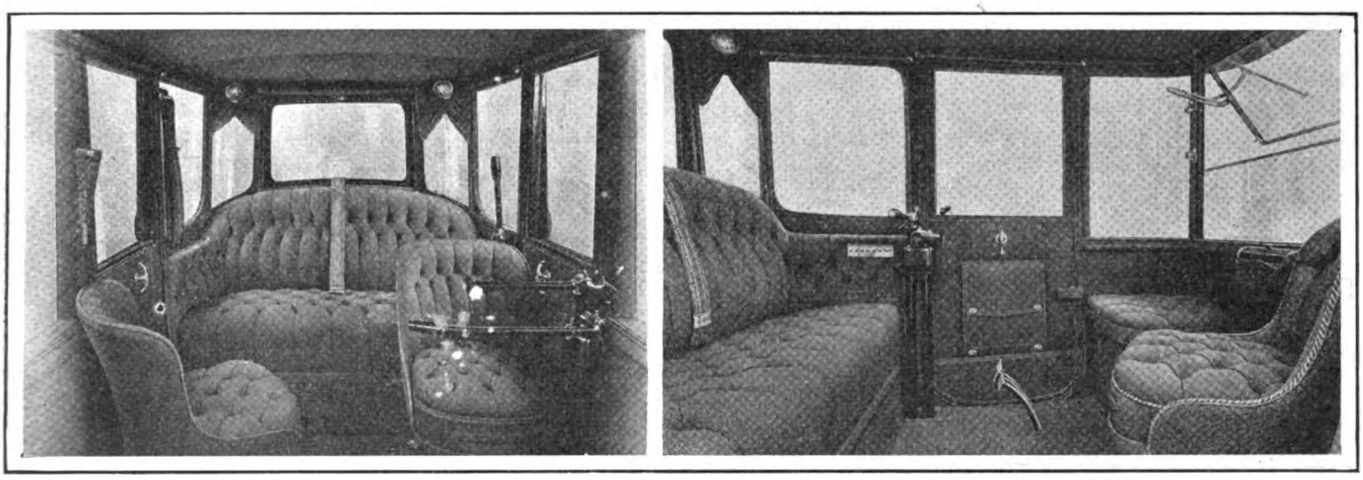
An oil bath provides perfect lubrication for the underhung worm

In the duplex control models, the interlocking cutout feature also prevents starting the car from either driving position unless the pedals are in position to operate from that seat. In these models providing drive from either seat there are two sets of steering and control levers and two sets of brakes. The operation of shifting pedals from one driving position to the other has been simplified.

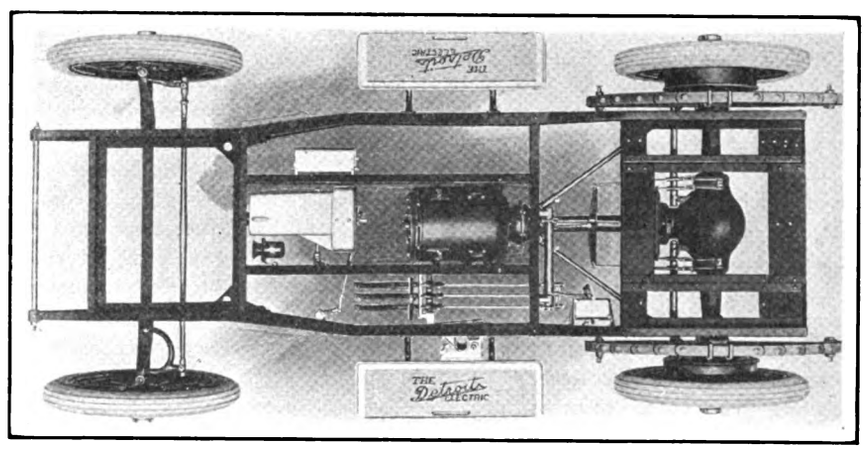
The drive system is practically the same as it was, the motor, torsion tube and rear axle being in unit. The motor is series wound.

In the Lanchester type of worm gear used on all the models excepting one the worm is below the wheel and runs in a bath of oil. Axles are floating; the housings have been somewhat changed in order to give them greater strength and less weight.

The controller has been redesigned to give easier action and more perfect automatic lubrication. There are five forward speeds, 5, 8, 13, 17 and 20 miles per hour. Resistance is eliminated except on first speed.



Left—Duplex drive car has levers entirely out of the way when not in use. Right—In the rear drive model the seats are very sociably arranged and are easily reached



The controller mechanism is enclosed in a housing attached to the frame forward of the motor, protected, but accessible

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What Do You Think of Marston's

Some Supplymen Say They're Good—More Say They're Ver
And Next Week Watch for Marston's Second Lette

THAT MARSTON BARGAIN LETTER!

That Marston bargain method still continues to draw in a lot of adverse comment. Supplymen do not seem to take well to his proposition of cutting the price of some article for a week, making it a bargain to draw trade, and at the end of the week putting it back again.

Supplymen generally are opposed to a cut price of any kind and base much of their opposition upon this feeling. The first letter this week is from a man who requests that his name be not used.

And another letter has just come in from Marston himself in which he backs up his original letter and makes some very pointed remarks.

WATCH FOR IT NEXT WEEK!

CUT PRICE ALWAYS BUSINESS WRECKER

This Man's Name is Withheld—Read What He Has to Say

Editor Motor World:

I want to give you some actual facts as to what happens in the automobile accessory trade as a result of price-cutting. These **facts** are ones which have come before the writer personally in his travels from New York to St. Louis and north to St. Paul for **the last five years** and which have taken place amongst the jobbing trade.

In the city of Pittsburgh, a certain make of article enjoyed a very good sale; in fact, the manufacturers of this article claimed Pittsburgh **their stronghold,** as they had every jobber of any size and consequence handling the line.

One began to **cut the price** on this item, and the rest of the trade held back for a while and then **cut to meet it. He cut again,** and the **rest stood still.** Finally a cut-price house put the article out **as a leader,** running a sale **all week** at the **actual cost price** of the article in question.

This article was so **thoroughly killed** that six months from the time this took place this item is looked upon **with disgust,** and not 100 have been sold since, whereas up to the time this started one account alone was **averaging 100 a month,** and the party who did the cutting does not sell 20 per cent of the amount he used to sell.

Wherever you cut the price of an automobile accessory—and it is a well-known fact **you can never raise the price again**—the **only thing** you can then do is to **reduce it;** and when an article is reduced in this way the jobber cannot sell the same to the dealer and make a fair profit, and the dealer cannot meet the competition and make a fair profit; hence they **cut the item out altogether, ruining the manufacturer.** And the funny part of it is that the **party who does the cutting** does not get rid of any quantity worth while.

To illustrate very clearly this point: Cut-price houses as a general rule depend upon **mail order** business only, and as a result do a **cash business** only. People who do a **cash business** only should certainly be able to **pay their bills promptly.** I can name offhand half the dealers in a certain New England city who do this kind of business and who **cannot pay their bills in thirty days.** If they would only pay them in thirty days it would be all right, but they need sixty and ninety, and more than that. The other firms in this city do not cut prices and it is an absolute fact that they **pay their bills much better** than the cut-price houses.

In this city, as every automobile accessory salesman knows, the trade is in a demoralized state, owing to the cutting of prices, and the biggest jobber there only recently **paid all his bills and got out.** If the **others** got out it would be **only through the courts.**

There seems to be a **movement** on foot **among** the accessory **manufacturers** unknown to each other—you might say a spiritualistic movement—to stop selling these cut-price houses altogether; and, within the past week or ten days, I know of three firms, good-sized ones, too, who have instructed their men to do their utmost to **keep their products out of their hands.**

Here is another situation that takes place: A store cuts the price, another one follows suit; the man who **first** cuts to save himself must cut **again,** until there is no profit even in the **item** for him. His trade, finding he is low on this item or several more, soon advertises it, and keeps calling for the same stuff; but you cannot keep on selling at no profit, so he **goes looking for a substitute,** which is usually the same thing but much cheaper in construction and material and has no brand on it, and on which he can make a profit.

Men see his circular and order by mail, and the article proves defective; the customer, who is far away, gets disgusted, usually never returns the goods but makes a firm determination never to buy again from such a concern.

If the mail-order house or cut-price house does not average more than one sale per customer per catalog **sent, he cannot exist,** as even the saying, "There is a sucker born every minute and the country is full of them," is bound to soon become exhausted.

The **cut-price houses do not buy the quantities** either, as is generally believed. This was figured out in a confab of four or five well-known salesmen who compared notes recently in a certain hotel.

If one was permitted to give names and actual facts, cities, etc., **my statements would be proven beyond a doubt.**

SHOULD NOT LOWER PRICE OF STAPLES

Hartford Man Says It All Depends on What You Would Cut

Editor Motor World:

Holding a cut-price sale is all **right** on some things and not right on others. It is all right on clothing, caps, gloves and the like. Staple goods on which **the** price is fixed cannot be sold cheaper. We frequently have sales on unrestricted goods.

Joseph Somers,
Manager Retail Store,
Post & Lester Co.,
Hartford, Conn.

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ıupply Store Bargain Methods?

ıd and Tell Why—Read the First Letter on These Pages—Which He Talks Straight From the Shoulder!

ANOTHER WHO SAYS CAN'T RESTORE CUT

Never Tried It But Is Convinced There It No Merit in Plan

A discount on one article to attract trade is not approved by the Auto Motor Cycle Co., 2440 North Broad street, Philadelphia, Pa. To begin with, the company has never tried it, though suggestions along similar lines have been frequently offered.

The chief objection to the plan is the fact that once the price of an article is reduced it is **doubly hard to put in up again.** Customers take a drop in price as a matter of course, but **demand explanations** and are hard to convince when an advance is exacted. Though in the plan under discussion the article is cut 20 per cent and afterwards simply advanced to its original price, it reacts to the same disadvantage as would a flat increase in original price.

INJURIOUS RESULT DECLARES LANGDON

Can Never Put the Price Back to Its Original Figure

Motor World,

Gentlemen:

The idea of selling a certain popular article at a cut price in order to gain business thereby has several injurious effects. The principal one is that it is **an impossibility** to ever sell that article at its **former price,** as the customer who purchases it at the lower price will always expect to buy it at the cut rate.

What Will Competitor Do?

The indirect injurious effect will be your competitor's action in the matter. He will in turn take popular lines of similar merchandise you are selling and sell same to his trade at a cut rate, whereby ultimately pretty nearly all lines of your merchandise will be sold at a lower price than was originally intended.

In pretty nearly all instances profit on merchandise to the dealer selling his goods at the regular list price is none too great to take care of his **overhead expense** and give **service** to his customers. If he is **deprived** of this **margin of profit** the customer and the tradesman both suffer. The customer lacks that which is paramount today in business, namely, **"service,"** while the tradesman on the small margin of profit he is obliged to live on, gradually makes less and less money, until he is finally **compelled to quit.**

William J. Langdon, Secretary,
Universal Auto Co., Hartford, Conn.

PHILADELPHIA MAN SAYS "GOOD IDEA"

Does It in His Business But Generally on Gasolene

The Keystone Auto Supply Co., 2730-34 North Broad street, Philadelphia, Pa., believes that the reduction in price on one article as a trade gainer is a **good idea.** The decrease in profit on one thing is made up in the corresponding increase in sales and in attracting new trade.

The idea, though, is not a new one. Not only is the method approved, but it is **frequently practiced** by the concern, and to it is attributed a number of sales that otherwise might not have been made. The discount, however, does not apply to standard articles, being **chiefly** confined to **gasolene.**

Will Make Other Sales

It is figured out that if a motorist becomes acquainted with the fact that he can secure gasolene at a reduction from the prevailing charge, an inspection of stock will result further to his advantage. The inspection may result in the sale of a standard article, which though no lower in price than could be secured elsewhere, would be purchased on the spot, it having previously **slipped the purchaser's mind** that he meant to purchase it.

The sauntering around of motorists while waiting for the "gas" tank to be filled has resulted in frequent sales of small needfuls, such as tubes, patches, etc. The reduction in price, however, seldom approximates 20 per cent.

"LEADER" IS USED WITH GOOD RESULTS

Washington Tire Man Says It Helps to Build Up Trade

According to Manager E. H. Johansen of the Washington, D. C., branch of the United States Tire Co., specializing is productive of excellent results. The experience of his branch, which, however, does only a wholesale business, selling to dealers, is that the pushing of a certain article, whether by making it a "leader," by running a series of advertisements, or otherwise bringing it forcibly to the attention of the public, is a first-rate plan and pretty certain to get results. The view of this branch is that such a feature will increase the business on a certain article 20 per cent or more; that real pushing in some ingenious way brings a greatly increased business.

BUT IT MUST BE A BONA FIDE BARGAIN

So Says Washington Man If Scheme Is To Be a Success

J. J. Hass, manager of the Firestone Tire & Rubber Co.'s branch, Washington, D. C., believes that possibilities are offered in the advertising of a leader by supply stores. He states that he fully agrees in this plan. He says he can see no reason why such a scheme should not get results. His assistant points out that the mere display of a certain article on the front counter has resulted in many sales, simply through putting it where prospective customers could see it easily.

This view, however, was qualified by the suggestion that the article used as a leader **must be** in the nature of a **real value** at a cut price, **not something cheap** and apparently marked down for the occasion.

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Dealer's Legal Status

Moline Man Wants to Know How He Can Get Back a $90 Overcharge After Dealer Has Gone Out of Business—Conditions Justify Suit Against Manufacturer

By Geo. F. Kaiser

THE QUESTION

I have read with interest your column in Motor Wold on legal phases of various transactions, and, as I am up against it on the purchase of a car, I ask your opinion.

In May, 1913, I wrote to an Eastern firm relative to the purchase of one of their machines, and was referred to their Chicago agent. After writing him and receiving a reply and price on car, I went to Chicago to close the deal. In view of the fact that there was no representative west of Chicago I was given a 20 per cent discount on the purchase of the car; I made a deposit of $200 and when the car arrived a bill of lading came for overcharge of something over $90.

This was from the factory, for the car was shipped from the factory and not the Chicago agent. On seeing the overcharge, I telegraphed the factory and in reply was told the overcharges were for additional equipment, but I wrote and explained that the additionals were already accounted for and there was still the overcharge of over $90.

Company Promised to Pay Overcharge

The next I heard of the company was from their district sales manager over long distance from Chicago, stating he had arranged for the Chicago agent to mail me a check for the overcharge, and that, in the event I did not receive said check, the company would forward check for the overcharge, as the company did not want me to return the car, nor did they want me to leave it at the depot.

Well, this conversation took place on a Saturday evening, and sure enough, on Monday morning the check for the amount of the overcharge arrived. All unsuspecting, I turned in the check with balance to cover bill of lading so as to get release of the car, and, much to my surprise, I was informed by the bank a few days after this took place that they had received notice from the Chicago bank on which the check had been drawn that it was refused for insufficient funds, even after legal steps had been taken to collect same.

Please understand, I paid the money to the company, not to the Chicago agent, and then, when I advised the company of the check episode, I was told to collect from the Chicago agent, even after the company's district sales manager had told me, and written me in confirmation of the telephone message, that the company would pay if the agent did not.

Finally Referred to the Dealer

I have tried for over a year now to make collection from the company, without avail. They have put me off from time to time, but finally informed me that I should collect from the Chicago agent, who, by the way, skipped out last winter and I don't know where he is at present.

After all this explanation, can you tell me whether the company is liable for the amount of the overcharge after knowing what they did, and after getting the money for the car after my explanations to them, or am I the final loser, through no fault of mine?

Thanking you very much for any information you may be able to give me, I am, etc.

P. H. W., Moline, Ill.

THE ANSWER

If the company is financially responsible you should have no difficulty in recovering judgment against it in a suit brought on the check. Of course, if they are not financially responsible and have nothing, you will be unable to get your money back.

It will be best not to bother with the agent, but proceed directly against the company, as they have recognized any dealings which he may have had with you and ratified any contracts or agreements which he may have made on their behalf.

The fact that you were given a check for the overcharge would seem to be an admission on the part of the company that they had no right to make that overcharge and it is doubtful if it would be necessary to go into the matter of the overcharge at all on the trial of your action.

It would be well to have a report on the company's standing before instituting suit, as they may be in a precarious financial condition, and of course you do not want to throw good money after bad.

Legal Question Involved Is Simple

The legal question here involved is very simple, merely your right to recover on a check on which payment has been refused for lack of insufficient funds, and from the facts as you state them there would seem to be no reason why a judgment should not be recovered in your favor.

It is well to remember that in the ordinary case, where one deals with an agent, one must ascertain just what authority the agent has to act for the principal. In other words, if an agent does things which he is not authorized to do by express or implied authority, the person who has made him agent will not be bound.

When an agent has proper authority, any acts which he may do are just as binding on his principal as if they were done by the principal himself. In a case where an agent exceeds his authority, his employer may thereafter ratify and affirm his acts, in which case the principal will likewise be held.

Relations of Maker and Dealer

It must always be borne in mind that the relation of manufacturer and agent in the motor trade is not the usual relation of principal and agent, for in that case usually the agent is his own independent principal, merely buying motor cars from the manufacturer at a discount from the list price, with the understanding that certain exclusive territory is to be given to him in consideration of his depositing some stated sum of money and advertising and lending his best efforts to sell that certain make of car.

Appropriates $10,000 For Motor Parade

Ten thousand dollars has been appropriated by the New York Commercial Tercentenary Commission for the motor car pageant which is to be held the evening of October 28 as a part of the celebration of the 300th anniversary of the beginning of chartered commerce in New York. Half of this amount will be expended for prizes and awards.

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Too Much "Ginger" Worse Than None At All

Reilly Would Have Dealer Literature of a Sincere, Valuable Type – Artificial "Hot Stuff" In Majority of Cases Makes No Impression

By Ray W. Sherman

THE SALES MANAGER drew a sheaf of letters to himself and scanned each one before he affixed his signature at the bottom. He was very quiet about it.

Across the desk, Reilly, too, was obliged to be more or less quiet, because there was no one else in the Sales Manager's office to talk to except the Sales Manager, and with him signing letters he couldn't be talked to.

Reilly's Eye Goes Roving

As the Sales Manager started on his trip down through the heap of letters, Reilly's eye began roving around; it went to the hat tree, the few pictures on the wall, out the window, up at the ceiling, down to the floor, across the Sales Manager's desk, and then started to make another round trip. The Reilly eye was crossing the desk on this second trip when it stopped.

The eye was arrested by a mimeographed sheet of paper. Mimeographed sheets of paper are not uncommon or particularly exciting, but at the top of this one in typewritten capital letters was a very important looking "EAT 'EM UP!"

"That's good," thought Reilly. "Eat 'em up! Let's look at it. Let's see what's got to be eaten up and who's got to eat it."

He reached out for the sheet and pulled it to him and proceeded to ascertain the occasion for all the capital letters, exclamation points and eat-'em-business. The eat-'em-up dissertation began like this:

"EAT 'EM UP!

"SHOW THEM NO MERCY!"

"Some dope," said Reilly to himself with a cynical little smile.

The eat-'em-up continued:

"We've got 'em on the run and we're going to keep them running!

"Last year was the biggest and best year the Sennett Motor Car Co. ever had—and the coming year is going to be better!

"How do we know?

A Trifle Peremptory

"Very good question—but the answer's easy! It's going to better because you dealers and salesmen are going to help us make it better. Awfully simple, isn't it?

"HERE'S ANOTHER THING!

"The results last year indicate that a majority of the dealers and salesmen had their coats off. That's fine! We're proud of you! But we'd like to ask you to do something else for us. Take off your vests! And, as for those dealers who forgot to take their coats off last year, take off that coat and vest and shirt—and then some. Get right down to your fighting togs! Take your selling club and whale the life out of them!

"The other cars in the Sennett class got a jolt last year. Give 'em another this year—and a harder one! Kick 'em in the ribs!

"EAT 'EM ALIVE!

"SHOW THEM NO MERCY!"

There was more on another sheet in the same strain. If the dealer who read it became as frenzied and brainstormed as the man who wrote it apparently was there would be some commotion among the young army of Sennett dealers when that shell of hot shot busted in the field. Reilly smiled slightly outwardly and more inwardly as he again perused the eat-'em-alive document.



The advertising manager saw at a glance what was being "eaten up"



Reilly picked the eat-'em-up between his thumb and the rest of his fist. "Honest, Jim, what good is that stuff? Would you read it? If you did read it would it do you any good?"

"Some Hot!" His Opinion

He continued to inspect the document while the Sales Manager went on with his letter signing and was even staring intently at it when the last letter was flipped into the "out-going" basket.

"Well?"

Reilly looked up at the Sales Manager's question and found an unfathomable smile on that official's countenance.

"Some hot!" remarked the dealer, on whose head the light glinted through the sparse hirsute growth.

"What do you think of it?"

Reilly smiled. "Why do you ask?"

"Because I want to know, you poor fish! Why did you think I asked? Really, what's your candid opinion of it?"

"I hate to tell you, Jim." Reilly let the eat-'em-alive document volplane from his fingers to the desk and wrinkled his but lately smile-wreathed mouth into a serious, drawn effect.

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"Don't you like it?"

"I can't say that I do—I can't say that I do." Reilly repeated the phrase slowly.

"What's the matter with it?"

"What's it for? What's the reason for it?"

"Oh, it's just a little ginger talk we're going to get out as a part of our 1915 selling campaign. We——"

"Who's going to get it?"

"Oh, dealers, salesmen, branch men—everybody in the selling organization."

"And after they get it, what? What are they going to do with it?"

"Read it! What do you suppose they're going to do with it?"

After They Read It—What?

"And after they read it," supplied Reilly, "they're supposed to thrill and enthuse and rush right out into the street, grab some innocent bystander by the neck and sell him a car. Right?"

"Exactly," laughed the Sales Manager, leaning back in his chair much amused.

"Fine scheme!" was the caustic comment.

"Oh, don't be so sarcastic; nobody's going to make you eat anything if you really object."

"Who wrote it?"

"Banks, the advertising manager; but don't shower cusses on his poor head; he's not entirely to blame. The advertising agency which handles our business has been helping us get the new year's business under way and suggested a series of ginger talks to the sales force. One of the agency's experts was up here a while ago and dictated a sample of what he thought was hot stuff and advised Banks to go ahead on that line—and he did."

"What do you think of it, Jim?"

"Why—" the Sales Manager, twiddled his pencil and hesitated. "I can't say that I ever was much impressed with that line of stuff."

"No. I guess not!"

Why Is It Sent Out?

"But, on the other hand, Reilly, it is handed out by a lot of people who are supposed to know their business. If it isn't any good why do they do it?"

"Yes, why?" Now you've asked something!" Reilly picked the eat-'em-up from where it had landed on the desk and grasped it firmly between his thumb and the rest of his fist. "What good is it? Honest, Jim, what good is that stuff? Would you read it? If you did read it would it do you any good? Would——"

The door opened and through it appeared the heavily thatched head of Banks, the advertising manager. He saw at a glance what was being "eaten up"—and stopped. "Go right ahead, don't mind me," he said. "Let's hear the rest of it." And, laughing, he came into the office and made himself at home beside the desk.

"Reilly was just taking a little flyer at your eat-'em-alive ginger sheet," laughed the Sales Manager.

"That's the stuff," declared Banks. "A real honest opinion is what we want."

"You've come to the right place," answered the Sales Manager.

"Go ahead with that opinion," requested the ad man.

"I was just saying I didn't like it," continued Reilly. "I have seen a great deal of that line of stuff in my day—and I'm no spring chicken." Reilly dropped his aggressive and earnest manner of speech and went on in a quiet tone.

Waste Basket Gets Most of It

"I have seen a lot of that stuff, and I'll guarantee that pounds and pounds of it have gone into thousands of waste paper baskets. It is the old and time-worn ginger talk which is supposed to make salesmen enthuse and be better sellers. It generally is written by some man who has some of the theory of salesmanship but who never sold so much as a spool of thread in his life.

"Very often it is a capable advertising writer who is gifted in writing cute and so-called punchy sayings—and I will say right here that not every one can write that line of dope. But I still maintain that it is wasted effort on the part of the manufacturer or sales head who puts it out. It doesn't ring true, to begin with; and it is like pouring water on a duck's back, in the second place. It is ineffective.

"You can best imagine its usefulness by placing yourself in the position of the man in the field. Here am I, for instance, and take my two salesmen, too, Charley and young Tommy Trumbull. We work hard six days in the week and are plugging every minute to gather in the sales and make more money than we made during preceding periods. We consider ourselves effective workers; I know I so consider myself and if my two men weren't that type I wouldn't have them.

Forgets the Personal Touch

"If you came along and called us loafers and laggards we would very likely want to bust you in the eye. But you send out this sheet from the office. It tells us to work harder, to make a better showing than we made last year. God knows we want to do better every year, but we hate to have you tell us we're going to do. That sounds as if you were going to make us do it—and we don't like that tone. We generally read such a thing through, throw it in the waste basket and forget about it.

Doesn't Beget Enthusiasm

"Here's another thing. Supposing you wanted to talk to me right here in the office. Would you start in and yell at me in capital letters to 'eat 'em alive'? You certainly would not. If you wanted to put out more cars this year than last and wanted the dealers to help put the deal across you would explain the proposition in so many words and request my cooperation. And I would tear my head off to sell my quota. But for this stuff! Bah! I wouldn't turn a hair!" And Reilly gave the eat-'em-up sheet another little aeroplane flip and sent it scuttling across the desk.

"What would you send out?" Banks asked the question in all earnestness.

"If I were to send out anything—and the right sort of thing is good—I would drop that airy fairy brainstorm tone and send the dealer a letter signed by, for example, the Sales Manager. In it I would tell him what I had to say and do it in a sincere, sensible tone that would appeal to any business man. Make it on your plain, ordinary letter style. This eat-'em-alive stuff is too palpably an artificial effort and doesn't mean anything at all, and when you keep it up week after week its effect is lessened each week. It's like covering grub with pepper. If you get on too much a little more doesn't have any effect at all.

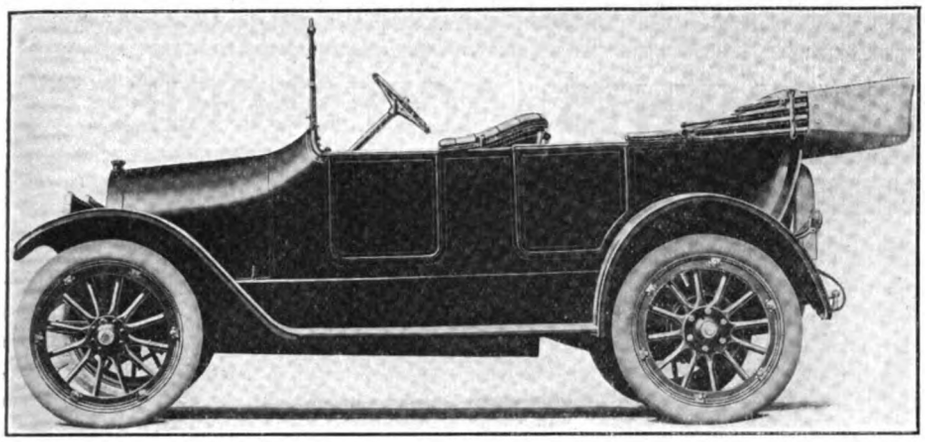
Used Some Real Sales Points

"Benny Doyno, who retails and jobs supplies and accessories in Callawassa, has put out some of the best sales dope I ever saw. His scheme is to take some one selling point and explain it fully and sensibly. One week, I remember, he showed the necessity of meeting customers as soon as they come into the store and not letting them wander around for ten minutes and possibly get sore. That was good sales dope, and he didn't have any eat-'em-alive in it, either. It——"

"We haven't sent this out yet," interrupted Banks.

"No," smiled the Sales Manager, "and I don't think we will. We just left it here on the desk so you would see it. We knew we'd get an opinion on it." And he reached for another batch of letters which his secretary had brought in.

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The new Cartercar bodies have streamline forms. Friction drive is retained and the price is $1,250 with full equipment

Cartercar Concentrates on One Chassis

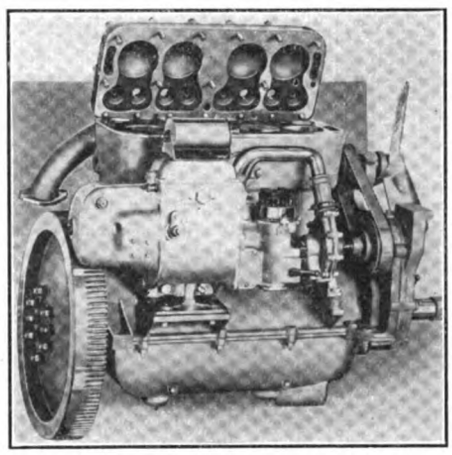
Large Model Dropped and Smaller One Continued at Former Price—Tires are Bigger and Motor More Efficient But Main Features Unchanged

Instead of the two chassis models that were manufactured during the past season, the Cartercar Co., Pontiac, Mich., will produce for the coming season but one model, which is practically a continuation of the lighter car; there will be no change in the price, which is $1,250 for either roadster or touring car. The model that has been dropped was a larger one throughout and the price was higher.

Full equipment is provided, including Delco electric lighting and starting, top with cover and inside curtains, rain-vision ventilating windshield, electric horn, speedometer, license tag holders, an extra demountable rim, pump, jack and tools.

While there has been no change in the main features of the car, notably the friction drive system, there have been improvements in a number of details. Tires, formerly 32 x 3½, are now 34 x 4, with non-skids in the rear. The motor, an L-head block casting with cylinders 3½ x 5, with detachable head, has been made somewhat more powerful by increasing the valve diameters and other slight alterations.

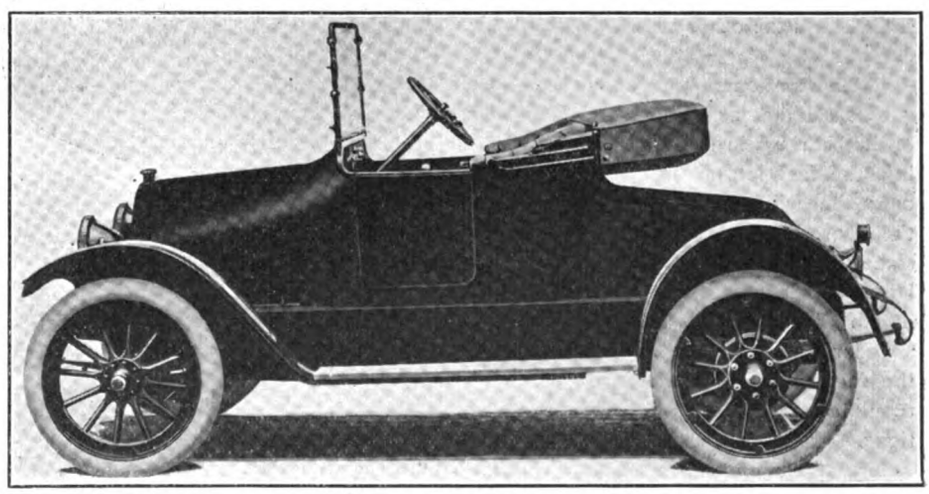
In the body the full streamline effect has been adopted with sloping hood, the cowl merging gracefully into the body lines, round-topped radiator and smooth sides. Domed fenders with protecting edges are fastened with concealed rivets and side lights are eliminated. A door has been added on the right side, which is the driving side as in the past. To permit easy use of this door the levers have been moved forward a little.



A removable cylinder head, carrying all the valves, makes access easy

The motor is of conventional design throughout with constant level splash lubrication and oil circulated by a pump; it has a Delco starting, lighting and ignition system and three crankshaft bearings. It is three-point suspended from two heavy arched cross members of the frame.

Rear springs are three-quarter elliptic, shackled outside the frame; all springs are long and flat. The wheelbase is 106 inches and the tread 56 or 60 inches. Gasolene is carried in a tank at the rear and fed by pressure. Steering is through a worm and nut mechanism; the arrangement of spark and throttle, as well as of the instruments on the cowlboard and their illumination, is in line with modern practice in every detail.



The roadster is mounted on the same chassis as the touring car and the price and equipment are the same. There are no side lights

1915 SPECIFICATIONS OF CARTERCAR

Price, touring or roadster	$1,250
Number of cylinders	Four
Shape	L-head
How cast	Block
Bore	3½
Stroke	5
S. A. E. rating	19.6
Ignition	Delco
Starting-lighting	Delco
Transmission	Friction
Wheelbase	106
Front tires	33 x 4
Rear tires	33 x 4 non-skids
Wheels	Wood
Steering	Right
Control	Right
Type rear axle	¾ floating

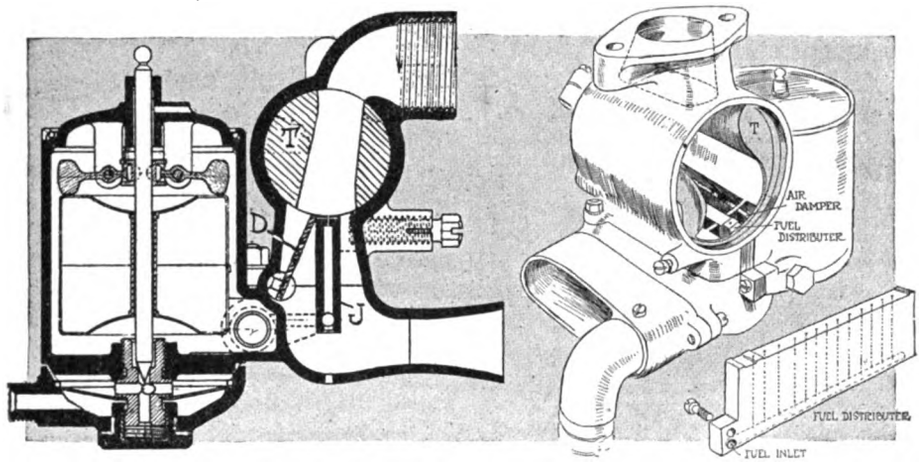
Equipment: Top with cover and inside curtains, rain-vision ventilating windshield, electric horn, speedometer, license tag holders, extra demountable rim, tools, jack and pump.

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RECENT DEVELOPMENTS in ACCESSORIES

Master Carburetter Has Many Jets

Manufacturing operations recently were commenced in Detroit by the Master Carburetter Co., the original establishment in Los Angeles, Cal., being maintained as well. The outstanding features of the Master carburetter are that it has a multiple jet system of peculiar form and that it has no adjustments, except an air-damper.



Left, section of Master carburetter; J is the multiple jet plate, which has a series of small jet openings at the top; T is the throttle with curved opening which uncovers the jets and increases the air intake opening at the same time; D is a damper which shuts off part of the air for starting and for adjusting the carburetter. Right, cover removed from mixing chamber. Fuel distributer with jets shown separately below

Conventional float chamber feed is used and the gasolene flows to jets which consist of a horizontal row of holes in a vertical plate-like riser, opening into the mixing chamber. The mixing chamber takes the form of a horizontal cylinder, and in it works the cylindrical throttle, which has two openings, one at the top and the other at the bottom, both curved.

The bottom opening has a curved edge, so shaped that as the throttle is turned on its bearings in the direction for opening, the fuel jets are uncovered one by one; the wider the throttle is opened the more jets are uncovered. At the same time the top opening, which regulates the flow of the mixture into the intake pipe, permits a greater flow at a wider opening, and vice versa. Thus the fuel and air supplies are positively regulated and always in fixed proportions.

The air damper referred to is a flat plate in the air inlet passage below the mixing chamber, one edge abutting on the jet plate when closed. In the closed position it shuts off half the air passage, which is divided in the middle by the jet plate. In this position it gives a rich mixture for starting. Wide open it gives the leanest mixture. The ordinary running position is about half open, though the exact setting is dependent upon atmospheric and other conditions. In any case the setting is easily regulated from the dash, the lever being set to give the best motor operation and being adjustable while the motor is running.

Wear of the throttle or of the jet plate is avoided by holding the parts out of actual contact, so that there is no friction. The throttle works sufficiently close to the jets to shut them off, but is held out of touch by its large bearings.



Polson's Bulldog boot has heavy rubber tread and smooth beveled hooks that do not dig into the tire

The range of sizes made runs from ¼ inch, which costs $15 list, to 2½ inch, which lists at $60. The 1-inch standard and the 1-inch Ford models cost $20, the 1¼-inch standard $25, the 1½-inch standard $35, and the 2-inch standard $45.

Included in the price of each carburetter is a Bowden wire dash control for the air damper and a hot air hood and flexible tube which delivers half of the air supply heated, the hot intake occupying only half the air passage in the carburetter. If desired, the carburetter can be furnished with the heating attachment arranged to heat the whole of the air supply.

Polson Tire Repair Specialties

Tire boots, bands, blow-out patches and similar goods are the specialties of the Polson Bros. Mfg. Co., Kansas City, Mo., and among them is the Bulldog boot. It is of the hook-on type and made of fabric with a heavy tread of tough rubber; the hooks are of smooth form, rounded and beveled to prevent injury to the tire, and each is held in place by two rivets. With each boot is supplied an inside blow-out patch. Two sizes are made, 3-inch, listing at $1.20, and 5-inch, listing at $2. The discount to dealers is 33⅓ per cent.

Other repair specialties recently brought out by the Polson concern include a boot much like the Bulldog, but with a steel studded tread made for tires from 3 inches to 5 inches and listing at from $1 to $1.60; a narrow chrome leather studded band, with two hooks on each edge, for covering comparatively small tire cuts, made for tires from 3-inch to 5-inch, and listing at from 50 to 70 cents; a long chrome leather boot studded with hardened steel studs and having four hooks on each edge, made in the same sizes, and listing at from $1.30 to $1.90; and a light inside blow-out patch made especially for Ford tires, made 8 inches long for 3-inch tires and 9 inches long for 3½-inch tires, and listing at 35 and 45 cents, respectively.

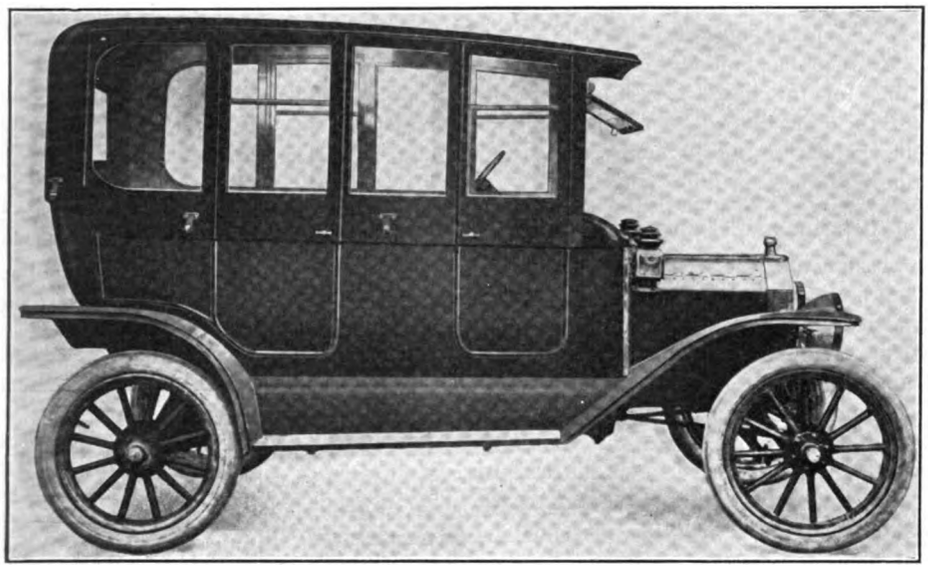
The Ford patches are made to suit the light weight of the machine.

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MANDEL ATTACHABLE BODY MAKES FORD A CLOSED CAR

Winter Tops for Touring and Runabout Models May Be Applied in an Hour —Weight Increase Amounts to Little

A convenient means of converting a Ford, whether of the touring or runabout type, into a completely enclosed car is supplied by the Mandel Limousine Co., 1455 Congress street, Chicago, in the form of an easily attachable superstructure or upper body which is delivered complete and ready to apply with all necessary fittings. The top is known as the "Limosette" and the list price for the type suitable for touring cars is $150; the runabout type costs $100; dealers' prices are respectively $120 and $80.

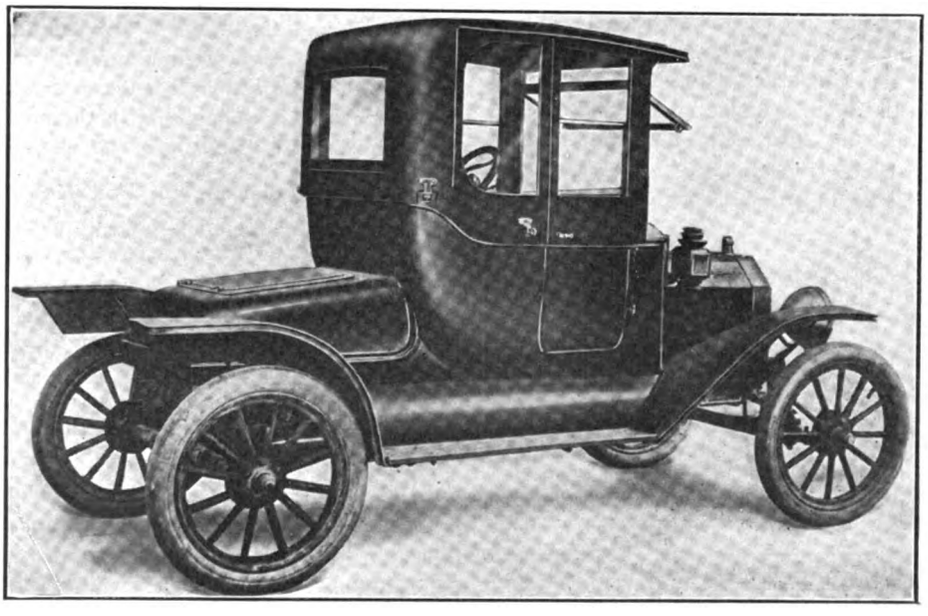


The Limosette may be applied to any Ford car of 1913-14-15, the summer top and windshield first being removed

The larger or touring car model weighs, complete, 150 pounds, and the smaller 100 pounds. These weights, however, do not represent the actual addition to the weights of the cars when the tops are applied, for the first step is to remove the regular folding top, the windshield and their various fittings. When the installation is complete the body top adds 75 pounds to the weight of the touring car and 40 pounds to the weight of the runabout. The tops will fit any Ford of the 1913-14-15 series.

The Limosettes are constructed in a substantial manner of kiln-dried wood, glass and steel. The roof is of three-ply veneer, the inner ply being of mahogany and finished in the natural wood. Wherever there is need of extra strength the wood is reinforced with steel. In the front there is an adjustable rain-vision windshield which can be set to give adequate ventilation, regardless of weather conditions. The windows can be raised and lowered, as in a regular limousine or other type of enclosed car. The equipment includes a dome light installed in the ceiling and wired, so that it is necessary only to attach the wires of the electric lighting system.

No particular skill is required to attach the top, and no special tools are necessary. The work can be carried out within an hour. The summer top and its fittings and the windshield and its fittings are removed from the car and the Limosette lifted into place. It fits snugly, and the only lining up required is to see that the Limosette door hinges are reasonably accurately lined up with the car door hinges, so that both will swing together properly; special fastenings are provided to hold the doors together.



A Ford runabout with a Mandel body in place makes a neat and attractive all-weather coupe and added weight is slight

Two Mitchells on Long Trips

Two cars, both Mitchell light fours of the latest model, left Chicago at noon September 23, one bound for the Atlantic and the other for the Pacific. The westbound car carried F. A. Chamberlain and family and is really on its way from Boston to Merced, Cal., where Chamberlain expects to arrive during the first week in October; the route of the Lincoln Highway is being followed. The eastbound car started with its bonnet sealed; it is expected to make a run of 7,500 miles in 30 days, which calls for a daily stint of 250 miles, and to finish with the bonnet still sealed.

The eastbound car is in charge of W. G. Hasley, of the Williams-Hasley Motor Car Co., Pittsburgh, Pa., Ray Barnett and Frank Zerbies. The car will pass through Elkhart, South Bend, Coldwater, Detroit, Toledo, Cleveland, Pittsburgh, Buffalo, Rochester, Syracuse, Albany, Manchester, Portland, Boston, Hartford, Providence, New York, Philadelphia, Washington, Baltimore and Wheeling, bringing up in Pittsburgh at the automobile show October 17-24.

Oldfield's Marks Not To Stand

The two marks made by Barney Oldfield at St. Louis last week, when he drove 1 mile in 44 seconds and 5 miles in 3:40⅖, will not stand because the Warner Horograph failed to record any time except the starting. Five stop watches caught the time.

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Advanced Maintenance

REFITTING RUNNING BOARDS

By George Fernwell

In cutting and fitting a new runningboard attention must be given to the following: The board should be cut exactly the same width and length as the original to avoid subsequent trouble in replacing the brass angle bar

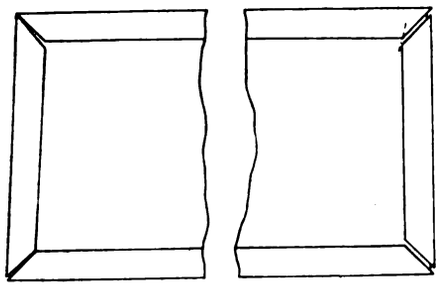


Fig. 1—In cutting a new running board the work must be accurately done or the corners of the brass binding will not join properly and the effect will be bad

or binding. Especially does this apply if the mitered ends of the brass binding are not permanently joined by means of reinforcing plates soldered to the under surface of the brass binding. If the new board is a trifle wider than the old one, the miters will not meet each other, giving the undesirable appearance indicated in Fig. 1.

Accurately Locating New Board

In order that the front and rear fender may not be thrown out of line with the chassis, the new board must be located in exactly the original position relative to the side member of the chassis, and relative to the front and rear wheels, respectively.

Should the old board be sufficiently intact for the purpose, it can be used to locate lengthwise at least two bolt holes in the new board. This would save considerable time in accurately locating the position of the new board by measuring, as later directed.

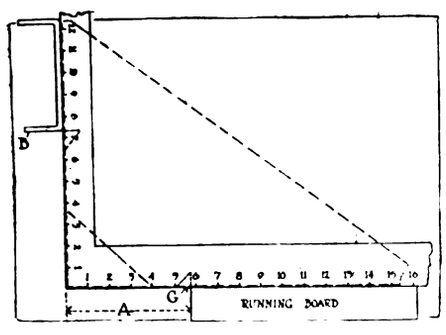


Fig.2—The running board must be located parallel with the chassis frame, and to do this use may be made either of a large square or a template made of a piece of sheet metal

If the old runningboard is not available for the purpose of locating some of the bolt holes, the new board must be clamped to the runningboard brackets in its proper position.

Using Metal Template or a Square

In locating the runningboard so as to be parallel to the chassis frame, use may be made of a square, or of a sheet metal template; the use of either being indicated in Fig. 2.

If the square is used, apply it to the uninjured runningboard in the same manner as indicated in Fig. 2. Note the dimension A on the graduations of the square and then applying the square in turn to the new runningboard, clamp the board to the bracket so that near both ends it coincides with dimension A, Fig. 2.

If a template is used, cut a waste triangular piece of sheet metal to conform at two edges with a right angle, apply it to the chassis frame and the uninjured runningboard, as indicated in dotted line, Fig. 2. Locate and cut the notch B and the notch C, transfer the template to the new runningboard, and clamp the board at both ends in such a position that it coincides with the notch C, Fig. 2.

Method of Marking for Bolt Holes

Specific instructions are hardly needed in the work of locating the new board at the proper distance lengthwise from the front and rear wheels respectively so as to correspond with the lengthwise position of the uninjured runningboard.

The clamps, Fig. 3, should not be applied to the board and brackets in such a position that they will interfere with scribing or otherwise marking the location of the bolt holes from underneath the board.

To mark each bolt hole for boring the necessary holes, use a center punch, the shank of which is of a suitable size to act as a guide to the point when the latter commences to penetrate the surface of the board. See A, Fig. 3. This not only saves scribing with a pencil or scriber, but it is an effective means of ensuring fairly accurate boring.

The bolt holes being marked, the board should be removed to a bench, or, better still, to a sensitive drilling machine, and drilled as perpendicularly as possible right through the board at each center punched location, but at this stage the holes should be bored with no larger than a 1/16-inch drill. The immediate purpose of the 1/16-inch holes is to accurately locate on the top surface of

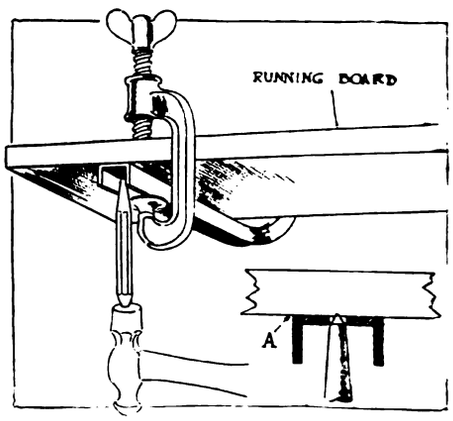


Fig. 3—Marking the board for bolt holes may be done with a center punch that just fits the bracket holes. The clamp should be applied so that it does not interfere with the marking

the board the point of the expansion wood bit to be used for counterboring the recess for receiving the head of the step bolt. If these locating holes are drilled much larger than 1/16 inch the screw point of the wood bit would not obtain the necessary grip upon the wood. See Fig. 4.

Boring and Counterboring for Bolts

The expansion bit referred to is a well-known carpenters' tool, the main feature of which is that it can be adjusted to bore any desired diameter of hole within practical limits. Having adjusted the wood bit to bore a diameter about 1/32 inch larger than the heads, proceed to counterbore the recess to a depth sufficient only to permit the

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bolt heads being sunk into the wood flush with the top of the board.

The required depth may be ascertained by applying the bolt to the recess head downward, Fig. 4. When all the bolt heads are fitted in this manner, the bolt holes may be enlarged from 1/16 to 3/16 or 1/4 inch, according to the diameter of the step bolt used.

The holes may be large enough to permit very easy insertion of the bolts, but must not be so large as to prevent the square portion of the bolt stem immediately under the bolt head embedding itself in the wood. The grip of the wood on the square part of the bolt is the only means of preventing the bolt turning while tightening the nut.

When ready to bolt the new board to the runningboard bracket, all the bolts should be partly inserted through the board and entering their respective holes in the brackets before driving home and tightening any one of the bolts.

Precautions Against Stripping

The object of the above precaution is to avoid the risk of driving one or more of the bolts to be inserted last in such a manner that the threads of the bolts would be stripped in forcibly driving the

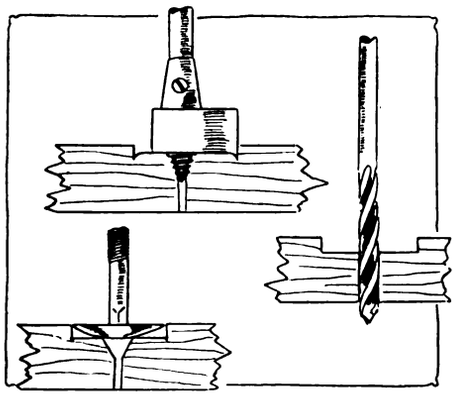


Fig. 4—Top—Expansion bit used to counterbore for bolt heads. Left—Measuring for depth of counterbore, using the bolt head. Right—Enlarging hole after counterbore is made

latter to their respective holes in the steel brackets. The bolt holes for directly attaching the fender or the heel straps of the fenders may be marked, bored and counterbored by the same method as described for the step bolts for the runningboard brackets.

Paper to Protect the Linoleum

If the new board is to be covered with linoleum this should be cut carefully to size and care taken that no portion of the linoleum projects beyond the edge of the runningboard. A few brass brads with small heads may be used to ensure that the linoleum is laid flat and in contact with the board all over.

Before fitting the brass binding in place, the linoleum should be covered with a layer of wrapping paper, Fig. 5. The wrapping paper should be cut to exactly the same size as the linoleum. The object of the wrapping paper is to keep the surface of the linoleum as clean as possible while the car is undergoing further repair work. When the car is ready for delivery to the owner the wrapping paper may be scored lightly with a sharp knife close to the edge of the brass binding and the paper removed, Fig. 5.

Two Ways of Making Good Joints

In refitting the original brass binding, supposing the latter to be in good condition, considerable difficulty will be experienced in making a presentable job at the miters. As previously referred to, if the runningboard is a little wider than the original, it will cause an unsightly opening in the mitered point, as in Fig. 1. Or if the end of the new board deviates considerably from being square with the sides an equally unsightly and undesirable effect will be produced.

Two courses are open to the workman; one is to carefully and exactly reduce the width of the board or square the ends so as to permit perfect joints of brass binding at the miters. Another method is to make a prominent joint at each miter by soldering corner plates to the under side of the joint. See Fig. 5.

The brass corner plates and the surface to which they are to be soldered should be cleaned and tinned and the corner plates soldered in place with as little superfluous solder as possible.

Squaring the Binding at Corners

A method of insuring that the four soldered corners shall be put together square, and especially without difficulty being met with at the last of the four corners to be soldered, is shown in Fig. 6. It would be impractical to attempt to permanently solder each individual miter without reference to the others. The result of attempting this would almost of a certainty be that after permanently soldering in turn each of three corners or miters so that each was

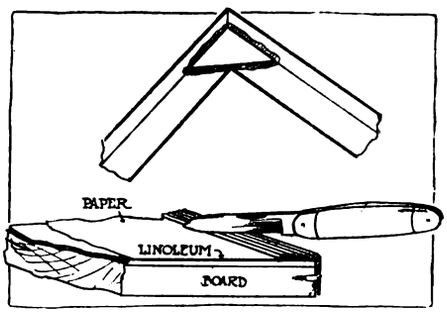


Fig. 5—A good way to finish the corners of brass binding is to solder on brass corner plates. Lower—When car is to be delivered paper cover on linoleum is cut away with a carefully used knife

individually at perfect right angles, that upon giving attention to the fourth or last miter it could not be made to coincide without excessive bowing or curving of one or both of the side members of the brass binding.

Frame That Facilitates the Work

In other words, at the fourth corner the miters would either overlap each other or would fall short of each other. With the brass binding permanently soldered up in a rectangular frame by the method shown in Fig. 6, there will not be required such an exact fit between the brass binding and the runningboard.

The ends of the board may be slightly out of square, or the board itself may be a little narrow, without affecting the miters, as by the above described process they will have been made permanently good fitting miter joints. Of course some care must be exercised to make the frame sufficiently accurate to serve its purpose, but this is not difficult.

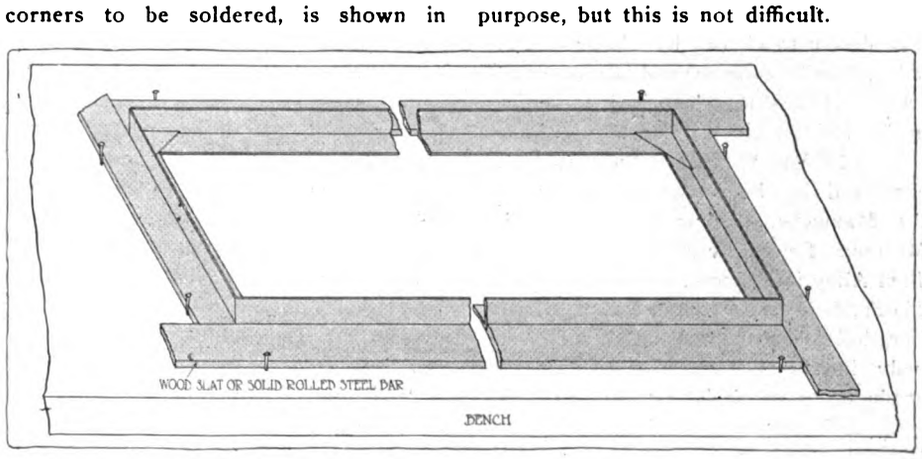


Fig. 6—To facilitate soldering up the joints of brass binding a frame may be made of wood slats or steel bars, the dimensions being such as to hold the binding exactly in the right position when being soldered

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World's Records for Burman

Peugeot Pilot Sets Marks for 75 and 100 Miles in Kalamazoo Century Grind—O'Donnell (Duesenburg) Second

Robert Burman, driving a French Peugeot, gained new laurels in the century dash staged in Kalamazoo, Mich., Saturday, September 26.

He took first prize of $1,000 in gold coin, established new world's records for 75 and 100 miles on a circular dirt track. and in addition had the distinction of landing premier honors in what undoubtedly was the best meeting ever run on a track of the kind. He drove a race that was uncannily consistent, never varying more than a few fractions of a second from the lap average settled upon before the start of the grind.

Burman's victory was not easily gained. Eddie O'Donnell, in one of the Duesenbergs, kept up the fight and trailed the Peugeot closely after Ralph De Palma, after leading for 36 laps, had been forced to quit on account of trouble with his eyes. O'Donnell led Burman for 59 laps, at the end of which the Duesenberg driver was forced to stop to change a tire. Then Burman went to the front and never was headed, although O'Donnell, after a quick tire change, made up considerable lost ground and at the finish was less than a lap behind the leader.

Burman's time for the century was 1:34:29⅘, which is considerably faster than the mark of 1:40:02 established by Ralph De Palma at Brighton Beach last Labor Day. O'Donnell also got inside De Palma's mark when he finished the race in 1:35:32⅗. Newhouse, in the Delage driven to victory by Thomas in the last 500-mile race at Indianapolis, was third in 1:50:45⅗, while Jack Callaghan in the Keeton finished fourth in 1:51:14.

In addition to these, the race was contested by Billy Carlson in one of the Maxwells, Wilbur D'Alene in the Marmon, Erwin Bergdoll in the Benz, Tom Alley in a second Duesenberg, Will Tidmarsh in the Great Western, Grover Bergdoll in the Erwin and "Cap" Kennedy in the Cornelian, a Kalamazoo product not much larger than a cyclecar. Still running at the finish were D'Alene, Carlson, Alley, Grover Bergdoll and Kennedy. Erwin Bergdoll went out of the contest with a broken intake valve, Tidmarsh's car was eliminated by motor trouble and De Palma was forced out when dust, laden with the calcium chloride with which the surface of the track was treated, got into his eyes. De Palma's accident was unusual and unfortunate.

ORDER OF FINISH AND DRIVERS WHO FAILED

Driver and Car	Time
Burman, Peugeot	1:34:29⅘
O'Donnell, Duesenberg	1:35:32⅗
Newhouse, Delage	1:50:45⅗
Callaghan, Keeton	1:51:14
D'Alene, Marmon	Still running
G. Bergdoll, Erwin Sp'l,	Still running
Alley, Duesenberg	Still running
Carlson, Maxwell	Still running
Kennedy, Cornelian	Still running
Tidmarsh, Great Western,	Out 47th lap
Bergdoll, Benz	Out 24th lap
De Palma, Mercedes	Out 36th lap

De Palma's jinx evidently rejoined him at Kalamazoo. After winning both events at the Elgin road races and cleaning up the card at Brighton Beach, in addition to taking other events, he came to the Wolverine meet an even favorite with Burman. When he reached Kalamazoo, however, he found that all of the gasolene in town was too low proof for use in his Mercedes. Consequently he sent to Grand Rapids for a supply of higher proof gas. As it turned out he overplayed it, for in practice an hour before the race started. De Palma blew out a copper gasket of his carburetter, the car caught fire on the backstretch and several drivers went to the rescue with fire extinguishers. The car was not badly damaged and after putting in a new gasket De Palma was ready to start.

On the evening previous to the race a flying start had been decided upon by the officials and the cars lined up in the order of their entries. This placed four rows of machines on the track, with Carlson on the pole as pacemaker. O'Donnell was on the outside, with De Palma on his left and Newhouse next. The field was bunched the first time around and at the signal De Palma and O'Donnell shot into the lead on even terms. De Palma opened up a slight gap on O'Donnell the next time around and from that point until his accident he held the advantage. The Italian driver, handicapped by a lower horsepower than some of the others and the fact that his car was equipped with offset steering knuckles, a decided disadvantage over a mile track, reeled off lap after lap at dizzy speed and kept the Duesenberg driver back of him in spite of efforts on the part of O'Donnell to take the lead. De Palma turned 20 miles in 18:45, 25 in 23:33, 30 in 28:06 and 35 in 32:46. On the 36th lap it was seen that something was wrong with De Palma for he slowed up on the backstretch and rolled slowly around to his pit. He climbed out, tore his goggles from his eyes, covered them with his hands and rushed for a can of water in the pit. Wearing a pair of defective goggles, the dust had worked inside and filled his eyes with calcium chloride. Several doctors came to De Palma and removed the irritant, but in the meantime O'Donnell and the rest had gained 7 laps and Ralph's case was hopeless.

From then on the contest was between the Duesenberg and the Peugeot. O'Donnell was in the lead from the 36th until the 59th lap, when he was forced to stop at the pit to change a tire, the tube of which had developed a slow leak. Burman, close up, at once assumed the lead and never was headed, although O'Donnell made frantic efforts to catch up. At one time it looked as if he might turn the trick, for in the last laps he gained a few seconds on each round. On the 83rd lap O'Donnell, amid tremendous cheering from the 30,000 fans gathered about the course, shot past Burman, but the handicap of almost a full lap was too much to overcome and the plucky Duesenberg driver had to be content with second.

Burman, as far as appearances went, might have been running his car along steel rails laid on the track, for he never varied three inches from a certain path, except when he would swing to the side to pass another car. He never slowed up and the rythm of his motor was never broken for an instant. He had no tire trouble and following the finish of the race and after skidding around 400 turns his Nassau tires showed no wear whatever and easily might have passed for new ones that had just been put on

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The Week's Incorporations

Shreveport, La.—Shreveport Overland Co.; capital $50,000; to conduct a general motor vehicle business.

Detroit, Mich.—R. T. W. Auto Accessory Co.; capital $5,000. James H. Pratt, William H. Lankin and Edward W. Mills.

Chicago, Ill.—Chicago Auto Equipment Co.; capital $2,500. Corporators—Harold M. Behan, Emil Fantana and William H. Dellenback.

Hebron, No. Dak.—Hebron Motor Co.; capital $10,000. Corporators—Theodore J. Bolke, Charles W. Lorenz and Fred Braun, Jr., all of Hebron.

Memphis, Tenn.—Bender's Garage; capital $2,500. Corporators—D. A. Fisher, C. N. Bender, L. G. Bender, L. T. Kavanaugh and I. W. Crabtree.

Birmingham, Ala.—Universal Service System; capital $10,000; to conduct a general motor vehicle business. Corporators—F. J. Bradley, W. C. Nabb and others.

Cleveland, O.—Neighbors Motor Co.; capital $10,000; to deal in motor cars. Corporators—W. C. Barger, M. T. Flanagan, R. Hall, Robert Jamison and Richard Inglis.

Chicago, Ill.—Century Auto Tire & Supply Co.; capital $10,000; to manufacture and deal in motor car accessories. Corporators—B. M. Goff, C. A. Wever and B. M. Goff.

Bellingham, Wash.—Whatcom Auto Co.; capital $5,000; to deal in motor cars. Corporators—Perry B. Newkirk, Frank W. Radley and Thomas R. Waters, all of Bellingham.

Memphis, Tenn.—Tennessee Garage Co.; capital $10,000. Corporators—Leroy H. Friedlander, Richard W. Burk, Dan L. Killain, A. D. Bearman and Joseph Friedlander.

New York, N. Y.—Aeon Garage Corporation; capital $500. Corporators—Sumner Gerard and Nathan A. Smyth, both of 50 Broadway; Lorne A. Scott, 243 West 55th street.

Akron, O.—Superior Tire & Rubber Co.; capital $25,000; to manufacture tires, etc. Corporators—George S. Andrus, H. E. Andress, C. G. Wise, W. E. Young and R. I. Moore.

New York, N. Y.—Washington Heights Auto Tire Works; capital $5,000. Corporators—William J. Buckley and Edward Buckley, both of 1748 Amsterdam avenue; William F. Keyes, 526 145th street.

New York, N. Y.—Motor Devices Co.; capital $30,000; motor car accessories. Corporators—William A. Allen, Yonkers; Auckland B. Cordner, 1733 Broadway; David Wills, 954 Boulevard, Astoria, L. I.

Wilmington, Del.—Storage Battery Locomobile Co.; capital $50,000; to manufacture and sell storage batteries and electrical machinery. Corporators—C. B. Bishop, C. J. Jacobs and H. W. Davis, all of Wilmington.

Brooklyn, N. Y.—Whipple Garage; capital $3,000. Corporators—Edward Appel, 443 East 138th street, New York; John C. Wolff, 27 North Washington street, Jamaica; James E. McKenna, 29 Boerum place.

Memphis, Tenn.—Atlas Machine & Garage Co.; capital $2,000; to manufacture and sell motor car parts and accessories and operate a garage. Corporators—H. E. Bridges, J. C. Scott, J. C. Bailey, W. D. Keysey and A. C. Fant.

Indianapolis, Ind.—Perfection Spring Wheel Co.; capital $50,000; to manufacture wheels. Corporators—Harry Weill, Max Weill and George V. Stein, all of Indianapolis; Austin Cabel and Bret Cabel, both of Washington, Ind.

Lima, O.—Buckeye Machinery Co.; capital $50,000; to manufacture gas engines and other machinery. Corporators—Edward E. Weiswander, Calvin Weiswander, Jacob A. Weiswander, George A. Hevrett and Daniel Armentrout.

Brooklyn, N. Y.—Knauer & Jockers Wagon Works; capital $5,000; to paint motor cars, wagons, etc. Corporators—George Knauer, 2245 East 12th street, Sheepshead Bay; Herbert E. Jockers and Lizzie Jockers, both of 703 Third avenue.

Highland, N. Y.—Howard W. Bloomer, Inc.; capital $10,000; motor car business. Corporators—Howard Bloomer, Highland; Raymond C. Bloomer, 96 Washington street, Poughkeepsie; Charles H. Buys, Jr., Cannot street, Poughkeepsie.

Brooklyn, N. Y.—Schroeder-Peters Corp.; capital $20,000; to manufacture engines, motor vehicles, operate a machine-shop, etc. Corporators—Arthur A. Schroeder, 346 Avenue O; Cuyler Heath, 172 Halsey street; Frank R. Greene, 27 Grace court.

New York, N. Y.—Economy Parts Co.; capital $1,000; to manufacture parts for motor cars, motorcycles, etc. Corporators—George K. Erb, Asbury Park, N. J.; Alan D. Morrow, 220 Broadway; J. Wallace Hahlstadt, 2766 Boulevard, Jersey City, N. J.

Yonkers, N. Y.—R. U. Bunker Engineering Co.; capital $20,000; motor car engineering and designing, motor car parts, etc. Corporators—Raymond U. Bunker, North Broadway; David H. Well, Flushing; George O. Elmore, Brick Church, East Orange, N. J.

Change In Capitalization

St. Louis, Mo.—Velie Motor Co., from $10,000 to $20,000.

Change In Corporate Title

Washington, D. C.—Matheson Motor Car Co. to Premier Motor Sales Co.

Recent Losses by Fire.

Easeca, Minn.—Lewer Garage; damaged; loss not stated.

Hettinger, N. D.—O. T. Peterson garage; damaged; loss not stated.

Grand Rapids, Mich.—Birdsall Garage; plant and several cars damaged; estimated loss $3,500.

West Roxbury, Mass.—Thomas F. Welch garage and blacksmith shop destroyed; estimated loss $5,000.

Metropolis, Ill.—F. B. Leonard & Co. and Leonard & Leonard; plants and stocks of motor car, buggy and wagon parts destroyed; estimated loss $50,000.

MOTOR CAR AGENCIES RECENTLY ESTABLISHED

ALABAMA

Place	Car	Dealer
Allenville	Oldsmobile	J. V. Park
Birmingham	Oldsmobile	Highland Garage Co.
Dothan	Oldsmobile	Douglas Baker
Montgomery	Oldsmobile	Cole Motor Co.
Union Springs	Oldsmobile	O. L. Hayes and S. P. Rainer, Jr.

ARKANSAS

Russelville	Saxon	Neal & Butler

CALIFORNIA

Cedarville	Oldsmobile	Wakefield & Wilson
Fillmore	Oldsmobile	John Opsahl
Fresno	Oldsmobile	California Invesement & Auto Starter Co.
Gustine	Oldsmobile	J. E. Hollingsworth & Jenson Bros.
Hollywood	Oldsmobile	F. C. Ford
Lincoln	Oldsmobile	Lincoln Garage
Long Beach	Oldsmobile	James R Ricketts
Los Angeles	Herff-Brooks	De Vaux Motor Car Co.
Los Angeles	Chandler	Peacock Motor Sales Co.
Los Angeles	Oldsmobile	Oldsmobile Co.
Napa	Oldsmobile	B. M. Norton
Oakland	Oldsmobile	M. Koenig & R. Drum
Pasadena	Oldsmobile	O. F. Boadway
Redding	Oldsmobile	Adolph Bystle
Riverside	Oldsmobile	Stever & McCulley
Santa Aba	Oldsmobile	C. F. Isaacson & Son
Santa Cruz	Oldsmobile	Hubbs & Brisac
San Diego	Dodge	C. W. McCabe
San Diego	Oldsmobile	McQuigg Bros.
San Francisco	Chandler	Bearson Motor Car Co.
San Francisco	Oldsmobile	Oldsmobile Co.
San Jose	Oldsmobile	Granger & DeHart
Stockton	Oldsmobile	Jake F. Meyer
Woodland	Oldsmobile	Simpson Bros. & G. D. Simpson
Yuba City	Oldsmobile	The Sutter Garage

COLORADO

Boulder	Oldsmobile	Wolcott & Blake
Colorado Springs	Oldsmobile	Markensheffel Motor Co.
Denver	Oldsmobile	W. W. Barnett
Fort Morgan	Oldsmobile	Wittwer & Wittwer
Greeley	Saxon	John E. Camfielo
Pueblo	Oldsmobile	Pueblo Auto Co.
Walsenburg	Oldsmobile	Adolph Unfug

DELAWARE

Wilmington	Chandler	Postles Auto Brokerage Co.

DISTRICT OF COLUMBIA

Washington	Dodge	Semmes-Kneessi Co.
Washington	Hudson	Semmes-Kneessi Co.

FLORIDA

Miami	Oldsmobile	W. W. Charles
Quincy	Saxon	H. T. Sharon

GEORGIA

Augusta	Oldsmobile	J. G. Ivey
Columbus	Oldsmobile	Jas. A. Lewis, Jr.
Cordelo	Oldsmobile	Webster Motor Co.
Dawson	Oldsmobile	Lamer Auto Co.
Dublin	Oldsmobile	J. B. Glover
Hawkinsville	Oldsmobile	Moboley & Parsons
Macon	Oldsmobile	Henry J. Lamar
Richland	Oldsmobile	Alston & Cannon
Rome	Oldsmobile	Louis Wright
Sycamore	Oldsmobile	Dr. H. W. Harris

HAWAII

Honolulu	Franklin	Von Hamm-Young Co.

IDAHO

Place	Car	Dealer
Boise	Oldsmobile	Rendall-Dodd Auto Co., Ltd.
Twin Falls	Oldsmobile	Western Auto Co.

ILLINOIS

Bushnell	Oldsmobile	Ball Brothers
Chicago	Oldsmobile	Bopp Motor Co.
Chicago	Oldsmobile	The Oldsmobile Co.
Cornell	Oldsmobile	Lishness & McKay
DeKalb	Oldsmobile	G. H. Deane & Co.
Dixon	Oldsmobile	Moeller & Wilson
Elkville	Meteor	C. T. Bass
Freeport	Oldsmobile	W. J. Maurer
Geneseo	Saxon..Velie & Chevrolet	Motor Car Co.
Hinckney	Oldsmobile	Craige C. Kennedy
Jacksonville	Saxon	Andre & Andre
Jacksonville	McFarlan	J. F. Claus
Kankakee	Oldsmobile	Frank Miller
Morris	Oldsmobile	J. A. McCormick
Princetin	Oldsmobile	Guy Kasbeer
Rock Island	Saxon	A. E. Shalline
Rockford	Oldsmobile	Geo. Maurer
Verona	Oldsmobile	John F. Stitt
Victoria	Glide	W. J. Selboldt

INDIANA

Ashley	Oldsmobile	E. A. Tisch
Bluffton	Saxon	Spitler Bros.
Hartford City	Oldsmobile	A. W. Tindall
Huntington	Oldsmobile	People's Garage
Remington	Franklin	C. B. Johnston & Son
South Bend	Oldsmobile	J. W. Elkart
Terre Haute	Oldsmobile	Olds Motor Car Sales
Wolcottville	Oldsmobile	F. P. Sanders & Sons

IOWA

Bellevue	Herff-Brooks	Harold H. Lahmeyer
Charles City	Herff-Brooks	C. M. Hansell

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Place	Car	Dealer
Davenport	Oldsmobile	Union Motor Co.
Deep River	Herff-Brooks	H. H. Hatter
Dennison	Oldsmobile	Dennison Auto Co.
Des Moines	Oldsmobile	Oldsmobile Co. of Iowa
Dubuque	Oldsmobile	Kassler Auto & Tire Co.
Elkader	Oldsmobile	Allen Bros.
Hampton	Herff-Brooks	A. C. Bird
Melrose	Herff-Brooks	L. D. Lemley
Sioux City	Oldsmobile	H. E. Shoberg Motor Co.
Waterloo	Oldsmobile	Wagner Wood Auto Co.
Williamsburg	Herff-Brooks	H. A. Dunlap

KANSAS

Hilly City	Saxon	Ivan B. Parker

KENTUCKY

Louisville	Oldsmobile	Kentucky Auto Co.

MARYLAND

Baltimore	Oldsmobile	Auto Sales Co.
Baltimore	Saxon	S. S. Greenwall
Cumberland	Oldsmobile	W. F. Robbosson
Hagerstown	Oldsmobile	Chas. E. Schenk

MASSACHUSETTS

Belchertown	Herff-Brooks	M. C. Baggs
Egypt	Oldsmobile	Egypt Garage & Mach. Co.
Everett	Oldsmobile	Outlet Furniture Co.
Dorchester	Oldsmobile	Proctor Bros.
Haverhill	Oldsmobile	Benton Motor Car Co.
Lowell	Oldsmobile	Arthur L. Cummiskey Motor Car Co., Inc.
Rockport	Oldsmobile	A. Carl Butman
So. Deerfield	Oldsmobile	E. C. Gibson
Springfield	Saxon	Baxter-McKinzie Co.
Springfield	Oldsmobile	Forest Park Garage

MEXICO

Torreon Coahuila	Oldsmobile	E. Ramos Barrora

MICHIGAN

Adrian	Oldsmobile	A. W. Ramond Auto Sales Co.
Battle Creek	Oldsmobile	Henry L. Phillips
Caro	Oldsmobile	J. D. Sutton
Constantine	Oldsmobile	Fish & Tarnutzer
Detroit	Oldsmobile	Oldsmobile Co.
Elkton	Oldsmobile	Paige Brothers
Grand Rapids	Oldsmobile	E. C. Blielley
Ionia	Buick-Ford	Benedict-Buick Co.
Ionia	Oldsmobile	Ogilvie & Wilkinson
Lansing	Oldsmobile	Union Garage
Mason	Oldsmobile	J. E. Taylor
Northville	Oldsmobile	F. S. Neal
Port Huron	Oldsmobile	Geo. E. Yokom
Saginaw	Oldsmobile	The Bolton Auto Co.

MISSISSIPPI

Columbus	Oldsmobile	Columbus Auto Co.
Meridian	Oldsmobile	Edwin S. Curtice

MISSOURI

Arbela	Herff-Brooks	J. L. Racey & Son
Boonville	Cadillac	G. A. Brownfield & Son
Hamilton	Oldsmobile	E. A. Hawkes
Kansas City	Oldsmobile	Bond Motor Co.
Kirksville	Saxon	Charles C. Gardner
Oregon	Oldsmobile	Auto Sales Co.
Pleasant Hill	Oldsmobile	Hanicke & Webster
Quittman	Meteor	Edward N. Malvern

NEBRASKA

Scotts Bluff	Oldsmobile	Edwards & Morse

NEVADA

Ely	Oldsmobile	Ely Garage & Supply Co.

NEW BRUNSWICK

St. John	Oldsmobile	N. Brunswick Motor Car Co.

NEW HAMPSHIRE

Berlin	Franklin	R. B. Wolf
Dover	Oldsmobile	Central Garage
Groveton	Oldsmobile	E. C. Brown
Laconia	Oldsmobile	Lougee-Robinson & Co.
Littleton	Oldsmobile	Ralph & Downing Gar. Co.
Manchester	Oldsmobile	Hanover Street Garage

NEW JERSEY

Camden	Oldsmobile	Ford Service & Sales Agcy.
Flemington	Oldsmobile	Harvey Kuhl
Jersey City	Oldsmobile	Krone & Minnerly
Long Branch	Oldsmobile	John P. Bradley
Morristown	Oldsmobile	W. H. Dutton Co.
Netcong	Oldsmobile	A. A. King
Newark	Oldsmobile	Essex Automobile Co.
Paterson	Oldsmobile	Oscar Peterson
Pennington	Oldsmobile	Pennington Garage
Peapack	Oldsmobile	John Burd's Garage
Union Hill	Oldsmobile	Union Automobile Co.
Trenton	Oldsmobile	Motor Shop

NEW MEXICO

Deming	Oldsmobile	Deming Auto Co.
Carlsbad	Oldsmobile	R. Ohnomue & Son
Roswell	Oldsmobile	H. T. Bailey
Wagon Mound	Oldsmobile	B. P. Robinson

NEW YORK

Alden	Oldsmobile	Arthur W. Eastwood
Albany	Oldsmobile	Wm. L. Schupp & Sons
Albion	Oldsmobile	Albion Garage, Inc.
Arcade	Oldsmobile	Pinney & Louis
Attica	Oldsmobile	E. J. Seagert
Binghamton	Oldsmobile	Binghamton Ford Sales Co.
Buffalo	R. & L.	Irving W. Daw
Buffalo	Velie	Monroe Motor Car Co.
Buffalo	Oldsmobile	The Oldsmobile Co.
Brooklyn	Oldsmobile	C. B. Derby & Co.
Caledonia	Oldsmobile	Central Garage
Canaadea	Oldsmobile	Fred Litchard
Castile	Oldsmobile	K. W. Lamberson
Elmira	Oldsmobile	LaFrance Garage Co.
Gowanda	Oldsmobile	Sipple & Dean
Hamburg	Oldsmobile	Daniel Brodbeck
Hoosick Falls	Oldsmobile	Phoenix Garage
Ithaca	Oldsmobile	E. J. Trapp
Jamestown	Oldsmobile	Jamestown Auto Sales Co.
Le Roy	Oldsmobile	Thomas Watson
Malone	Oldsmobile	Eldredge & Mason
Mexico	Oldsmobile	Oswego County Auto Co.
Monroe	Oldsmobile	Monroe Garage Co.
Newburg	Oldsmobile	Mayer & Berg
New York City	Oldsmobile	Oldsmobile Co. of N. Y.
New York City	Oldsmobile	J. Grose Simmons
Olcott Beach	Oldsmobile	W. F. Kruger
Rochester	Oldsmobile	George W. Henner
Schuylerville	Oldsmobile	Ford Garage Co., Inc.
Syracuse	Oldsmobile	Wright Bros.
Troy	Herff-Brooks	East Side Garage
Troy	Oldsmobile	Ilium Garage
Utica	Oldsmobile	Utica Regal Sales Co.
Washingtonville	Oldsmobile	Nicholl's Garage

NORTH CAROLINA

Asheville	Oldsmobile	D. C. Shaw Motor Co.
Greensboro	Oldsmobile	Guilford Motor Car Co.
Rocky Mount	Oldsmobile	Oldsmobile Sales Co.

OHIO

Alliance	Oldsmobile	George H. Judd
Akron	Oldsmobile	Middlebury Auto Garage
Bristolville	Oldsmobile	Miller & Dilley
Cadiz	Oldsmobile	J. W. Robertson
Cambridge	Oldsmobile	Cambridge Motor & Storage Co.
Canton	Oldsmobile	Canton Buggy Co.
Cincinnati	Herff-Brooks	Herff-Brooks Sales Co.
Cleveland	Haynes	Cleveland Motor Sales Co.
Cleveland	Oldsmobile	Windermore Euclid Garage
Columbus	Inter-State	Twyman Motor Car Co.
Eaton	Saxon	E. C. Wysong
Fostoria	Herff-Brooks	A. C. Ash & Son
Fremont	Krit	John P. Smola
Greenville	Oldsmobile	Central Auto Co.
Huron	Oldsmobile	C. E. Rhinemiller
Kenton	Oldsmobile	Arnett Auto Co.
Lima	Oldsmobile	W. E. Rudy
E. Liverpool	Oldsmobile	Lincoln Motor Car Co.
Logan	Ford	C. R. Lutz
Marietta	Chalmers	Marietta Motor Car Co.
Medina	Oldsmobile	Western Reserve Garage
Mansfield	Oldsmobile	Pat Gatton & Son
Marseilles	Saxon	M. R. Emptage
Newark	Oldsmobile	Fred W. Simpson
Norwalk	Oldsmobile	H. C. Newman
Toledo	Oldsmobile	Bunnell Auto Sales Co.
Woodsfield	Oldsmobile	Troutman Garage
Wooster	Oldsmobile	Warren Garage
Youngstown	Herff-Brooks	Cartercar Sales Co.
Youngstown	Oldsmobile	Youngstown Auto & Repair Co.

ONTARIO

London	Oldsmobile	London Mot. Sales Co., Ltd.
Sarnia	Oldsmobile	R. Milligan

OREGON

Pendleton	Oldsmobile	B. F. Trombley
Portland	Oldsmobile	Gerlinger Motor Car Co.

PENNSYLVANIA

Allentown	Oldsmobile	Berwin Auto Co.
Braddock	Oldsmobile	Copeland Garage
Chester	Oldsmobile	The Palace Garage
Columbus	Herff-Brooks	Scholton & Fuller
Easton	Oldsmobile	G. Russell King
Emporium	Oldsmobile	Emporium Machine Co.
Greencastle	Saxon	L. H. Leiter Bros.
Harrisburg	Oldsmobile	East End Automobile Co.
Hazleton	Oldsmobile	Hazleton Motor Serv. Co.
Houtzdale	Oldsmobile	H. J. Wagner
Lancaster	Oldsmobile	Geo. W. Crossell
Lonsdale	Oldsmobile	Heebner-Felver Motor Co.
Meyersdale	Oldsmobile	Keystone Garage
Norristown	Oldsmobile	Keystone Garage
Oil City	Oldsmobile	C. H. Weaver
Penn Argyl	Oldsmobile	Joel F. Batt
Philadelphia	Oldsmobile	Oldsmobile Co.
Pittsburgh	Oldsmobile	Oldsmobile Co. of Pittsburgh
Pottstown	Oldsmobile	Wm. P. Young & Son
Sharon	Oldsmobile	Greer Auto Co.
St. Mary's	Franklin	Elk Engineering Works
Washington	Oldsmobile	Washington Auto. Co.
West Newton	Oldsmobile	McKenery & Britton
York	Oldsmobile	J. P. Odon Auto Sales Co.

RHODE ISLAND

Arctic	Oldsmobile	B. F. Tufft, Jr.
Pawtucket	Oldsmobile	James A. Welch
Providence	Herff-Brooks	Jos. A. Pigeon
Woonsocket	Herff-Brooks	Fuller Bros.
Woonsocket	Oldsmobile	H. F. Burdick

SOUTH CAROLINA

Charleston	Oldsmobile	N. B. Paine

TENNESSEE

Knoxville	Oldsmobile	Cadillac Sales Co.
Nashville	Oldsmobile	Hager Motor Car Co.

TEXAS

Amarillo	Oldsmobile	Frank W. Hays
El Paso	Oldsmobile	Western Woodenware Co.
Marfa	Oldsmobile	D. C. Wene
Pecos	Oldsmobile	Landrum & Lynch
Port Arthur	Saxon	Linn & Smith
Wichita Falls	Oldsmobile	Motor Supply Co.

UTAH

Ogden	Oldsmobile	James Automobile Co.
Salt Lake City	Oldsmobile	Randall-Doff Auto Co., Ltd.

VIRGINIA

Lynchburg	Saxon	Piedmont Motor Co.
Norfolk	Oldsmobile	H. S. Meyers
Parksley	Oldsmobile	Parksley Automobile Co.

VERMONT

Burlington	Oldsmobile	P. T. Donovan
Brattleboro	Oldsmobile	Mosher & Tucker
Northfield	Oldsmobile	Cross Bros. Co.

WASHINGTON

Aberdeen	Oldsmobile	L. A. Poulsen
Bellingham	Oldsmobile	A. Burgess
Ellensburg	Oldsmobile	A. M. Wright and W. C. Wescott
Everett	Oldsmobile	L. S. Cannon and S. F. Sherrod
Seattle	Oldsmobile	Gerlinger Motor Car Co.
Tacoma	Oldsmobile	E. H. McClellan

WEST VIRGINIA

Glen Jean	Herff-Brooks	Robt. Esser

WISCONSIN

Brodhead	Herff-Brooks	Fleek & Knosel
Fond Du Lac	Oldsmobile	John D. Giddings
La Crosse	Oldsmobile	Moll-Savage Motor Co.
Madison	Cole	B. A. Warner
Milwaukee	Oldsmobile	Emil Estberg
Milwaukee	Overland	Geo. W. Browne
Milwaukee	Dodge	Edwards Motor Car Co.
Platteville	Saxon	Udelhoven Motor Co.
Prairie du Chien	Saxon	The Harrison Auto Co
Waukesha	Oldsmobile	R. E. Knowlton

WYOMING

Casper	Oldsmobile	Earl C. Boyle

Coming Events

* Indicates sanction by A. A. A.

Oct. 2, Trenton, N. J.—Track meet Inter-State Fair.

Oct. 2-3, Oklahoma City, Okla.—Track meet Oklahoma State Fair.

Oct. 3, Fresno, Cal.—Track meet Fresno Agricultural Association.*

Oct. 3-10, Cincinnati, O.—Automobile show, Cincinnati Automobile Dealers' Association.

Oct. 4, St. Louis, Mo.—Automobile show, Automobile Manufacturers' & Dealers' Association.

Oct. 7-17, New York, N. Y.—Electric vehicle show, Grand Central Palace.

Oct. 7-8-9-10, Detroit, Mich.—First Truck Convention of Motor Truck Manufacturers', Dealers' and Owners' Organization; promoter, Motor Truck Club of America.

Oct. 17, Tulsa, Okla.—Track meet, under auspices of J. A. Sloan.

Oct. 17-24, Pittsburgh, Pa.—Automobile show, Auto Dealers' Association, Inc.

Oct. 18-31, Milwaukee, Wis.—Convention, Northwestern Road Congress Auditorium.

Oct. 19, 20, 21, Philadelphia, Pa.—Electric Vehicle Association Convention.

Oct. 19-26, Atlanta, Ga.—American Road Congress of the American Highway Association and the A. A. A.

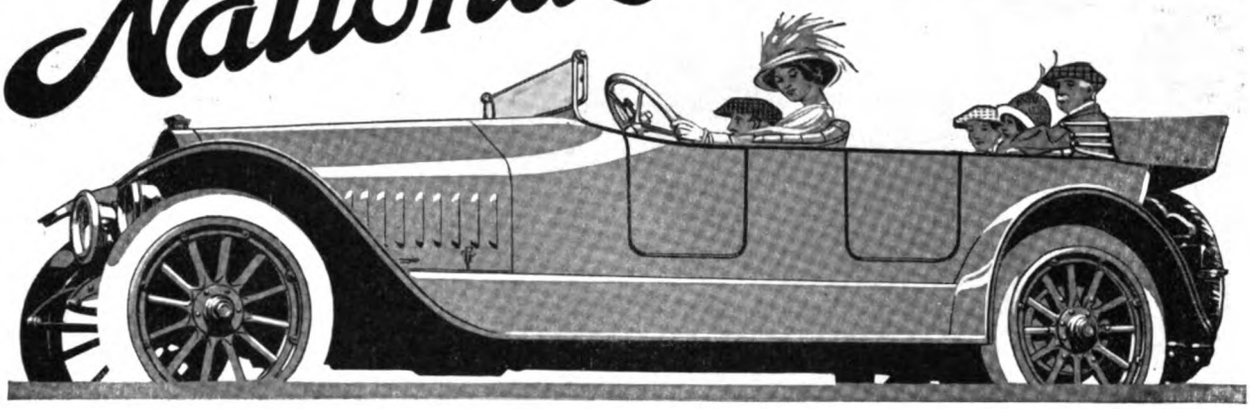
Oct. 28-31, Milwaukee, Wis.—Convention, Northwestern Road Congress.

Nov. 8-9, El Paso, Tex.—El Paso-Phoenix road race, under auspices of El Paso Automobile Club.

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National

NEW SIX SERIES—AA $2375



49% Increase For Dealers

For fourteen years *National* sales have grown steadily. This sound and successful progress is a tribute to conservative management with a quality standard. In the first six months of the 1914 calendar year *National* sales increased 49%. This remarkable increase reflects the merits of the *National.* And not once has quality been sacrificed to increase the sales volume.

Our financial system is helpful for *National* dealers. Our traveling factory service corps is appreciated by *National* owners, and this is a material saving to *National* dealers.

Buyers are selecting *National* cars because they now realize that the reputation of the *National* stands as a "paid-up" insurance policy on their investment. Complete information and facts of vital importance will be supplied on request to prospective *National* owners or dealers interested in the *National* methods of business building.

Do You Know How to Buy?

The secret of success of many a business man is "He knows how to buy." This particularly applies, now to successful car ownership. It is possible that a car might be good and still not be a good buy.

No matter where you live, it is decidedly to your advantage for you to investigate this *National.* Visit any *National* distributor or write us direct.

New Book Now Ready—Write

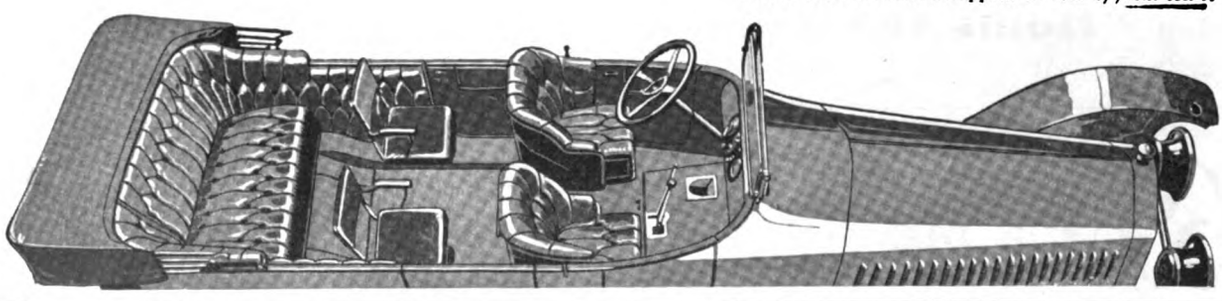
Series AA *Nationals* are made in 2, 4 and 5 passenger bodies at $2375. Six passenger, at $2500. Also furnished with Coupe and Cabriolet bodies.

MOTOR—Six cylinders en bloc 3¾ x 5½, develops more than 55 horsepower and gives fuel efficiency up to 16 miles per gallon. Wheelbase 132 inches, tires 36 x 4½, cantilever springs, electric starter and lights. Equipment complete in every detail.

Immediate Delivery

NATIONAL MOTOR VEHICLE COMPANY, Indianapolis, Indiana

National Six Passenger, with aisle between front seats that are really Turkish Arm Chairs. Extra cushion chairs disappear in rear of front seats.

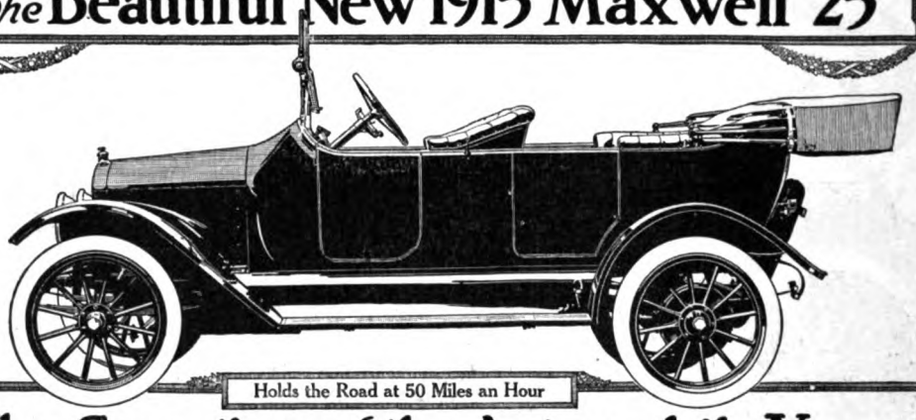


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New Price $695

With 17 New Features

The Beautiful New 1915 Maxwell "25"



Holds the Road at 50 Miles an Hour

The Sensation of the Automobile Year

The biggest automobile value ever offered for less than $1,000 Our production of 60,000 cars makes the new price of $695 fully equipped (with 17 new features) possible.

Here are the Seventeen New Features

1.—Pure stream-line body. 2.—Adjustable front seat. 3.—Simms high-tension magneto. 4.—Three-quarter elliptic rear springs. 5.—Tire brackets on rear. 6.—Spring tension fan. 7.—Kingston carburetor. 8.—Clear Vision Wind Shield. 9.—Foot-rest for accelerator pedal. 10.—Tail lights, with license brackets attached. 11.—Gasoline tank located under dash cowl. 12.—Crown fenders with all rivets concealed. 13.—Head lights lowered by rod running between lamps. 14.—Famous make of anti-skid tires on rear. 15.—Gracefully rounded, double-shell radiator equipped with shock absorbing device. 16.—Instrument board, carrying speedometer, carburetor adjustment and gasoline filler. 17.—Improved steering gear; spark and throttle control on quadrant under steering wheel; electric horn button mounted on end of quadrant.

Powerful—fast—unusually graceful and beautiful in its lines—roomy, comfortable and completely equipped with Top, Windshield and Speedometer the New 1915 Maxwell at $695 has more high priced car features than ever put in an automobile before for less than $1,000

Automobile experts have refused to believe that anyone could produce a full grown five passenger really beautiful fully equipped car—a car with real high tension magneto—a car with sliding gear transmission—left hand drive center control, a car with practically every high priced car feature for less than $1,000

Here it is. Here is a real automobile. Here is the easiest car to drive in the World—here is the greatest all around hill climbing car in the world. Here is an automobile to be really proud of.

Built complete by three gigantic Maxwell Factories at Detroit, Dayton and Newcastle.

With Electric Self-Starter and Electric Lights $55 Extra

The new 1915 "Wonder Car" is on display at Maxwell dealers. See it at once. If there is no dealer in your town write or wire us. Send your name and address for the New 1915 Catalog.

Every car backed by the great Maxwell Motor Co. Inc. Service Stations in principal Cities.

Maxwell Motor Co., Inc., Detroit, Mich.

More than 37,000 "1915" Maxwells Ordered Within Six Weeks After August 1st

On August 1st, the double page newspaper announcement — reproduced in miniature above—announced the 1915 Model Maxwell "Wonder Car." It was published in the leading newspapers of America and was followed by Maxwell page advertising in this and other prominent national publications.

Within six weeks after August 1st, more than 37,000 Maxwells were ordered by dealers. Everything indicates that, by the time this is printed, orders for at least 50,000 Maxwell cars will have been received.

This tremendous demand proves that the public and automobile dealers have recognized the 1915 Model Maxwell as the biggest automobile value ever offered for less than $1,000.

The Maxwell Motor Company is now shipping 800 cars a week to dealers. Within a short time, this production will be increased to 1,200 cars per week. To be sure of prompt delivery, go to the Maxwell dealer nearest you and order your Maxwell now.

5-Passenger Touring Car $695

2-Passenger Roadster $670 Maxwell Cabriolet $840 Maxwell Town Car $920

Any Model Equipped with Electric Self-Starter and Electric Lights $55 extra

"Holds the Road at 50 Miles an Hour"

$695

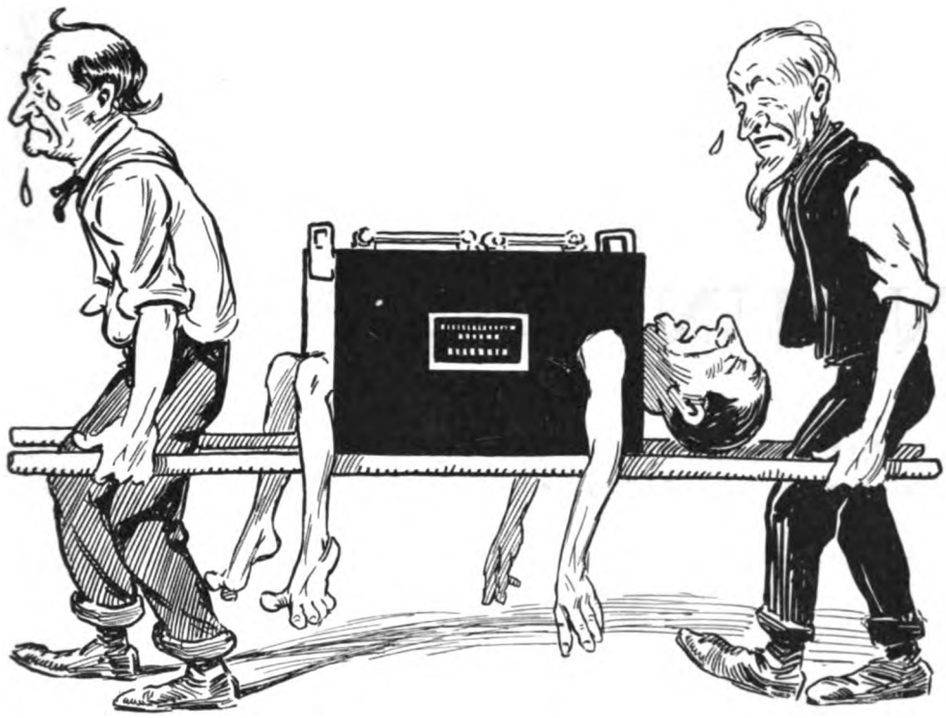
Write for the beautiful 1915 illustrated Catalogue. Address Dept. F.

Maxwell Motor Company, Inc.

Detroit, Michigan

$695

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A Dead Battery

is a common expression—which is very rarely applied to

THE WILLARD ILBAS BATTERY

It is unnecessary to coddle the ILBAS to keep it alive. Reasonable care is enough.

But, if the ILBAS does go dead from neglect or misuse, it can always be revived with an extra dose of electric juice.

The ILBAS is extremely rugged and durable—as nearly fool-proof and trouble-proof as a Storage Battery can be made.

Add to these qualities wonderful recuperative powers and you will readily understand why an ILBAS is so very seldom a "dead battery."

WILLARD STORAGE BATTERY CO.

Cleveland, Ohio

New York Branch: 228-230 West 58th St.
Detroit Branch: 736-740 Woodward Ave.
Chicago Branch: 2241 Michigan Ave.
San Francisco Branch: 821 Monadnock Bldg.
Indianapolis Branch: 318 North Illinois Ave.

SERVICE STATIONS IN ALL PRINCIPAL CITIES IN THE UNITED STATES, CANADA AND MEXICO

117

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ANNOUNCEMENT

MOTOR PRINT desires to announce the purchase of the monthly motoring publication MOTOR LIFE.

Commencing with the November issue both magazines will be combined into one and the name MOTOR PRINT will be retained.

For years MOTOR PRINT and MOTOR LIFE (formerly Motor Car) have occupied practically the same field, both being popular monthlies appealing to the great class of automobile owners.

The devotion of these publications solely to the interest of the owner class enables them to obtain the largest possible circulation, outstripping papers blanketing the industry, as an attempt to interest the many divisions, such as dealers, manufacturers, engineers, owners, minimizes the amount of information interesting to the owner.

Previous to this consolidation MOTOR PRINT led the entire field of automobile publications in the number of paid subscribers which it reached.

MOTOR PRINT now leads all competitors by a greater margin.

With the addition of MOTOR LIFE, MOTOR PRINT is able to still further carry out its general policy of a special publication devoted solely to the interests of the automobile owner.

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What This Consolidation Means to the Advertiser

No other industry on the face of the earth is so crowded with publications as the Automobile industry.

Some of these publications are performing a real function in this field and some are not. Some exist on charity, others on good fellowship, but the real publications spend real money for editorial stability which produce circulations of proven value to the advertiser.

The task of the advertiser in making a wise selection of mediums is a difficult one. Some advertisers turn in disgust from the complexity of conflicting claims of these class papers to the great general publications, admitting at the same time that they are paying for an enormous waste circulation in so doing.

The present process, therefore, of reasonable elimination which narrows the field of automobile papers to a few big strong mediums of established editorial policies and known circulation, is very welcome to the automobile industry.

MOTOR PRINT stands out as the great popular automobile monthly reaching far more actual motorists than any other automobile paper, and probably as many as the greatest general publication. Without paying for any waste its advertisers reach the greatest number of proven motorist readers obtainable from any publication in existence.

The addition of the circulation of MOTOR LIFE still further increases the value of this publication to the advertiser without additional cost.

The Motor Print Company

418-420 SANSOM STREET, PHILADELPHIA, PA.

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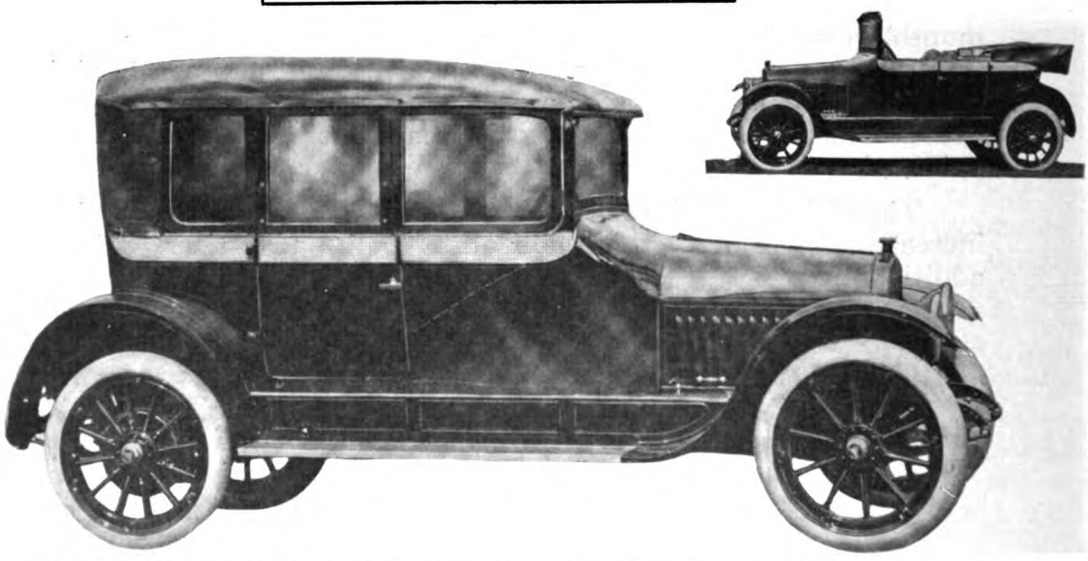
SPRINGFIELD
CONVERTIBLE BODIES

Sedan Type

We believe this body answers the demand for a convertible body applicable to the medium size chassis, such as the four and light six cylinder motors.

Then too, its cost, $800 added to the price of any medium sized chassis still holds the total cost of this equipment somewhat below the price of a standard two or three passenger coupe and much less than the price of a limousine.

The Springfield Convertible Body accommodates five passengers comfortably — all facing front.



We can furnish this body in a wide range of body colors and upholstery. Price $800.

Our discount to automobile dealers together with the selling advantages the Springfield Convertible Body offers, form a strong incentive for your investigation

THE SPRINGFIELD METAL BODY COMPANY, Springfield, Mass.

New York Branch, 1737 Broadway

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Studebaker

Studebaker Territory Is Sought After By The Best Class of Dealers—*Because*—

First—There is the Unvarying Standard of Studebaker Quality. That is builded upon Studebaker Character and the Studebaker Name, sixty-three years in the making. For sixty-three years that Name has stood for Soundness of Manufacturing and Merchandizing Methods, Stability of the Company, Fairness of Price and Precise Justice in Dealing.

In sixty-two years the American people have come to understand that the quality of anything bearing the Studebaker name is as near perfection and as nearly invariable as human intelligence and human conscience can make it. There are no flashes, "sensations" and depressions in Studebaker history. Studebaker cars—like all Studebaker products—are uniformly good.

That means much to the Studebaker dealer. It means that he is investing his money, staking his business reputation and future in a product that always keeps, and always will keep, its Standard of Quality, its Popularity and its Market. Studebaker Dealers are not speculating. They are not gamblers. They are sound, sane, progressive yet conservative business men. They sell Studebaker cars and are backed by the Studebaker Corporation.

Second—What does it mean to a Dealer to be backed by the Studebaker Corporation? Studebaker Dealers are not merely nominal representatives of the Studebaker Corporation. They are actually members of the Studebaker Organization. They recognize that. The Studebaker Corporation recognizes it. They have the prestige, the momentum, the spirit and the active co-operation of the Studebaker Corporation behind them. A Studebaker Dealer who has proved his worth—whatever his immediate success—is not left alone to his own resources, to develop alone his own territory, to solve his own problems, to work out his own salvation. The Company is behind him.

¶ Have You Ever Stopped To Think Why So Many Studebaker Dealers Are Strong Money-Making Business Men?

¶ Why So Few Of Them Ever Voluntarily Give Up A Studebaker Franchise?

The Studebaker Corporation develops its Dealers in accordance with Studebaker policies It helps its Dealer develop his prospects and assists him in following up those prospects. It helps him with follow-up literature, with direct and personal selling assistance, with the timely co-operation from the factory that closes sales.

Third—What does Studebaker Advertising mean to Studebaker Dealers?

To state the size of the annual advertising appropriation of the Studebaker Corporation in dollars and cents would not adequately describe the value of this vast selling factor to Studebaker Dealers.

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The Studebaker appropriation is one of the two largest appropriations of the world's automobile companies. Aside from the tremendous stimulus given Studebaker sales by the volume and unique character of Studebaker national advertising, there is the direct and immediate influence of Studebaker newspaper advertising to the Studebaker Dealer.

The Studebaker Corporation more thoroughly, scientifically and sympathetically than any other motor car company, analyzes the purely local and individual conditions and needs of Studebaker Dealers. And then strives to meet those conditions and needs of Studebaker Dealers in newspaper advertising. It focuses its newspaper advertising on its Dealer. It is not remarkable, then, that the good results of that advertising should be first manifested in the prosperity of Studebaker Dealers.

Fourth—Studebaker Service—its low cost to the Studebaker Dealer and its Big Profits in Re-Orders and Prestige.

Studebaker Dealers do not dissipate the profit of their original sale in costly replacements and adjustments—"to keep owners satisfied." The Studebaker car is built for service, and its cost of upkeep has been reduced to the minimum. That is another reason why Studebaker Dealers make money.

But the Studebaker Corporation does most emphatically insist that Studebaker owners be satisfied and kept satisfied. Its Dealers must represent the Company literally and worthily. They must give their customers

SPECIFICATIONS:

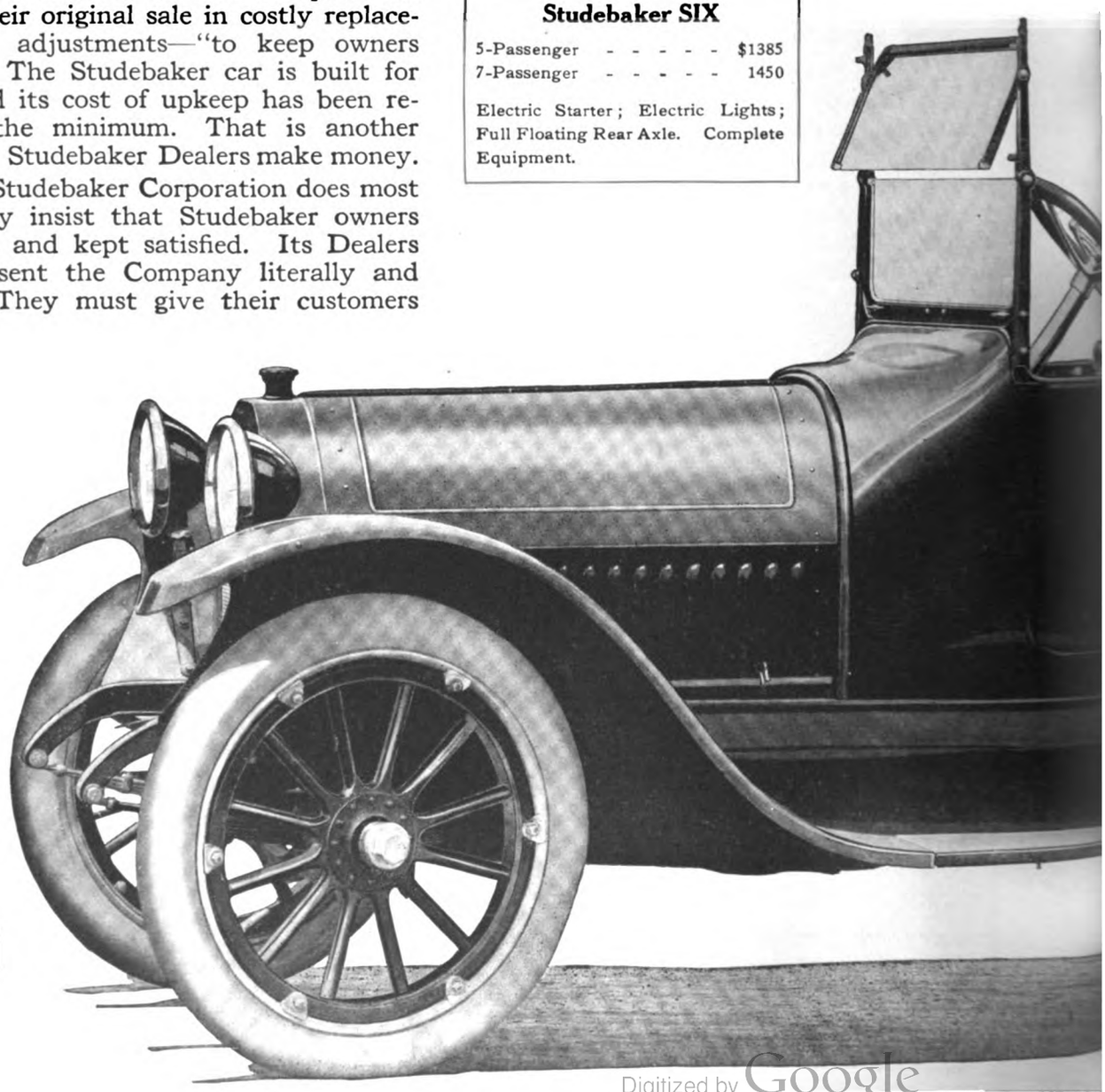
The New SIX—7-Passenger and 5-Passenger

Electric Starter, Electric Lights.
Two Body Styles; Five-Passenger and Seven-Passenger Touring.
Wheelbase—121 inches.
Long-Stroke (5-inch), Small-Bore 3½-inch Motor; Six Cylinders, en Bloc.
Special Dimming Headlights.
Smokeless, Non-Leaking Lubrication System.
New Exhaust-Silencing Muffler.
Concentric Piston Rings.
Cellular Radiator.
Crown Fenders.
15 x 2½-inch Brakes.
34 x 4-inch Goodrich Tires on Q. D. Demountable Rims; Safety Tread on Rear.
Extra Rim and Locking Tire Carrier.
Roomier Front and Rear Compartments.
Continuous Aluminum Running Board.
One-Man Type Top.
Built-in-Rain and Clear Vision Ventilating Windshield, Attaching Rigidly to Top.
Scientific Anti-Rumble Gasoline Tank in Cowl.
Magnetic, Non-Leaking Gasoline Gauge, the only One Approved by Insurance Underwriters.
Full Floating Rear Axle, Shaft Locking into Taper at Hub. Timken Bearings.
Full Equipment of 13 Timken Roller Bearings.
Irreversible Steering Gear.
Inter-Locking Ignition and Lighting Switches.
20 Operations in Painting Bodies.

Studebaker SIX

5-Passenger - - - - -	$1385
7-Passenger - - - - -	1450

Electric Starter; Electric Lights; Full Floating Rear Axle. Complete Equipment.



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SPECIFICATIONS:

The New FOUR Roadster and Touring Car

Electric Starter, Electric Lights.
Two Body Styles: Five-Passenger Touring; Three-Passenger Roadster.
Wheelbase—108 inches.
Long-Stroke (5-inch), Small-Bore 3½-inch Motor; Four Cylinders, en Bloc, Exhaust Manifold Cast Separate.
Smokeless, Non-Leaking Lubrication System.
Special Dimming Headlights.
Pressed Steel Push-Rods.
Concentric Piston Rings.
Tubular Radiator with Auxiliary Water Tank.
Crown Fenders.
12 x 2½-inch Brakes.
Hot-Jacketed Schebler Carburetor Bolted to Cylinders.
Magnetic, Non-Leaking Gasoline Gauge, the Only One Approved by Insurance Underwriters.
Generous Footroom in Both Compartments.
33 x 4 inch Goodrich Tires on Q. D. Demountable Rims; Safety Tread on Rear.
One-Man Type Top.
Built-in Rain and Clear Vision Ventilating Windshield, Attaching Rigidly to Top.
Full Floating Rear Axle, Shaft Locking into Taper at Hub. Timken Bearings.
Full Equipment of 13 Timken Roller Bearings.
Irreversible Steering Gear.
Flush Dash Equipment.
Extra Rim and Locking Tire Carrier.
20 Operations in Painting Bodies.

The Studebaker Proposition

Owing to the division and subdivision of several territories that have been abnormally large there are now desirable openings for a few dealers who can measure up to the Studebaker standard.

We will be glad to send the Studebaker Dealer Proposition to any who are interested

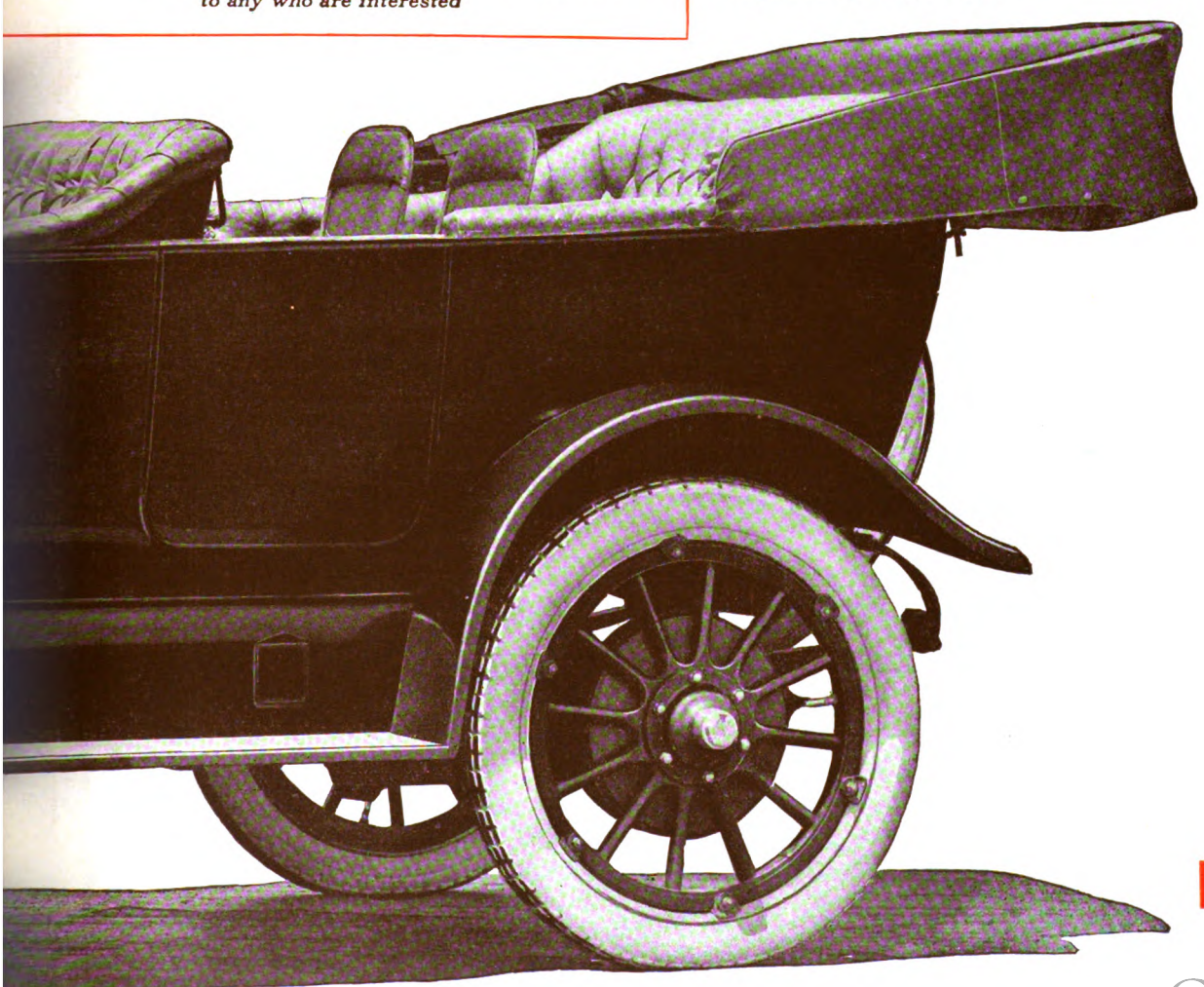
the Service which the Company has established as a nation-wide standard. And in this, again, the Company stands back of its Dealers. Such service as the Studebaker Corporation now universally guarantees has added enormously to the reputation and prosperity, both of the Company and of the Studebaker Dealer.

So, this is the Studebaker Foundation upon which the Studebaker Dealer builds his business—the rock-bottom of business stability and honor. And he builds, consequently, not to sell this season's model and "clean up" and get out; but for the length of his business career, a permanent, honorable, profitable business—growing consistently and wholesomely year after year—destined to last so long as the great Studebaker Corporation lasts.

That is why Studebaker Dealers everywhere are the same type of substantial, successful business men.

That is why a Studebaker Dealer—who has proved himself worthy—is always a Studebaker Dealer.

That is why the Studebaker Corporation and Studebaker Dealers—for all these constructive years—have been bound together by ties of common ideals, mutual interests and reciprocal prosperity.



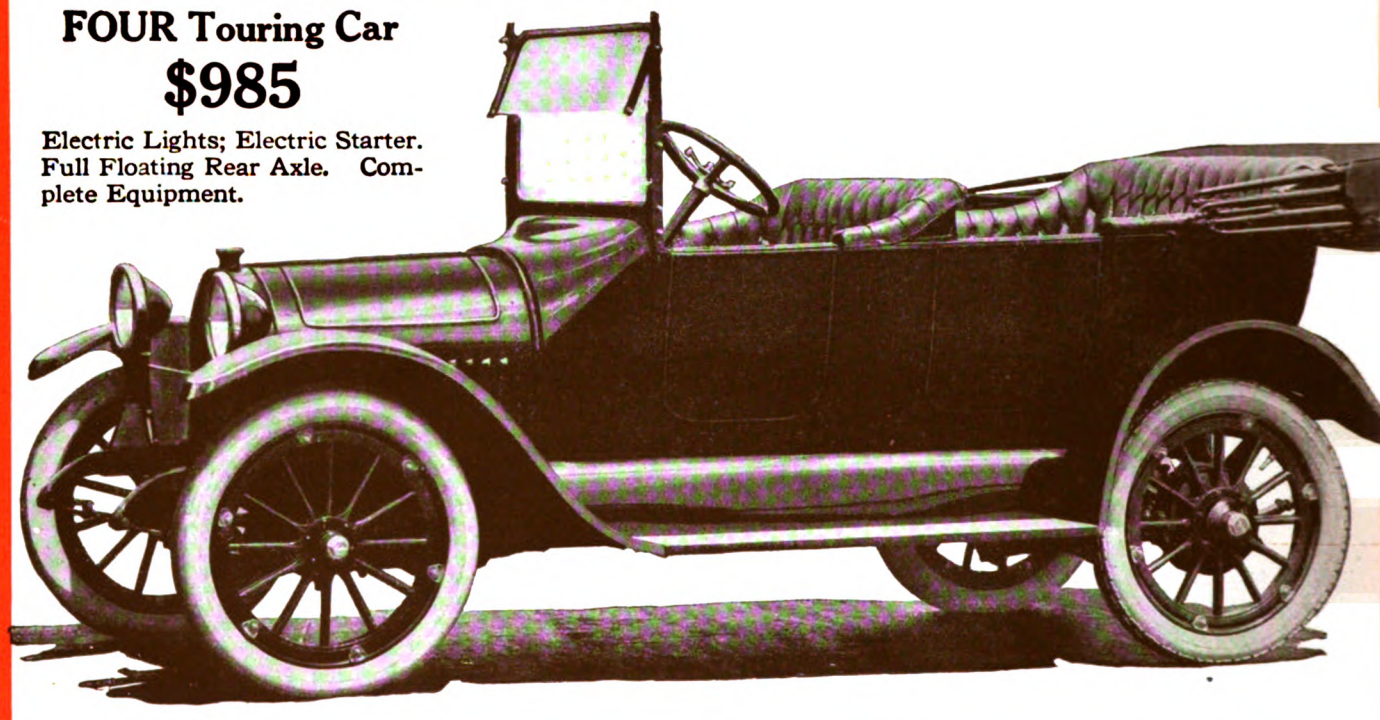
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Studebaker

FOUR Touring Car

$985

Electric Lights; Electric Starter. Full Floating Rear Axle. Complete Equipment.



Here Is A Book That Ought To Be In The Hands of Every Ambitious Dealer

"How To Make Money Selling Motor Cars"

Elements of success in the building of a permanent and prosperous business. Together with some practical suggestions from wide-awake Studebaker Dealers.

It is an interesting book—And it is yours for the asking.

STUDEBAKER, 1004 Piquette Avenue, DETROIT

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Bumps and road shocks tend to distort the mechanism of your car and even cause breakage.

Solid roller and ball bearings transmit this strain to the operating parts of the automobile.

The Hyatt Quiet Bearing with its hollow spiral roller is the one bearing that cushions road shocks—absorbs vibration—reducing noise and tends to keep the gears and shafts in alignment.

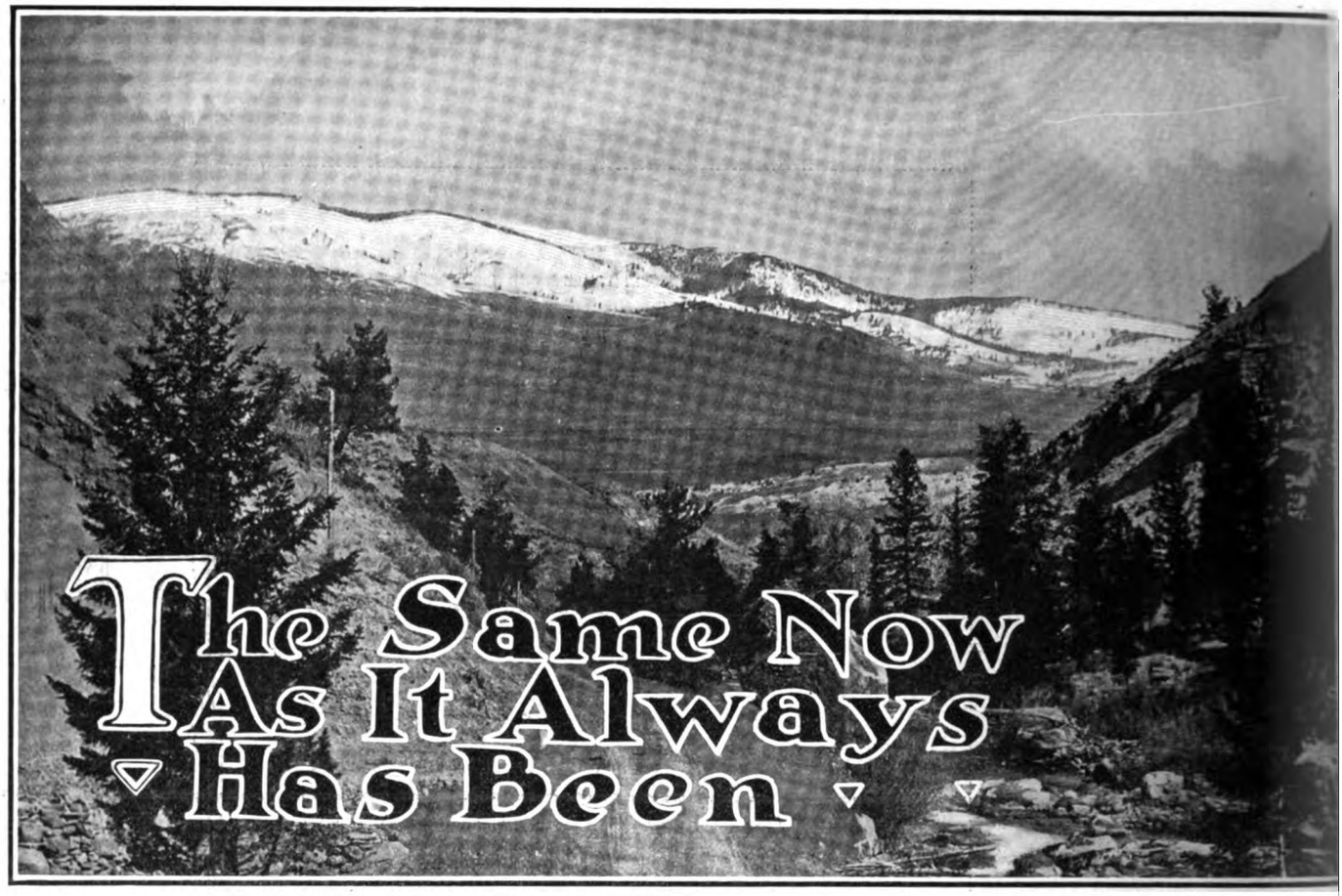
Two books, one about motor car bearings in general for prospective purchasers, the other for automobile owners, will be sent on request.

"Hyatt Quiet Bearings"

HYATT ROLLER BEARING CO.
DETROIT. CHICAGO
NEWARK, N.J.



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OUR GUA

If Raybestos fails to last one full year from the date it is placed on the car, we will furnish new lining without charge. This guarantee applies to all types and weights of pleasure cars and to all light trucks.

THIS, in effect and practice, has been the guarantee of Raybestos ever since it was placed on the market nine years ago. It is not new; we are reiterating it so as to bring a deeper realization on the part of those whose uniform satisfaction with Raybestos has caused them to grow careless of the advantages—quality, service and economy—of specifying and insisting upon Raybestos.

The Raybestos guarantee is a better and more logical guarantee than goes with any tire or any other part of a motor car not made of steel.

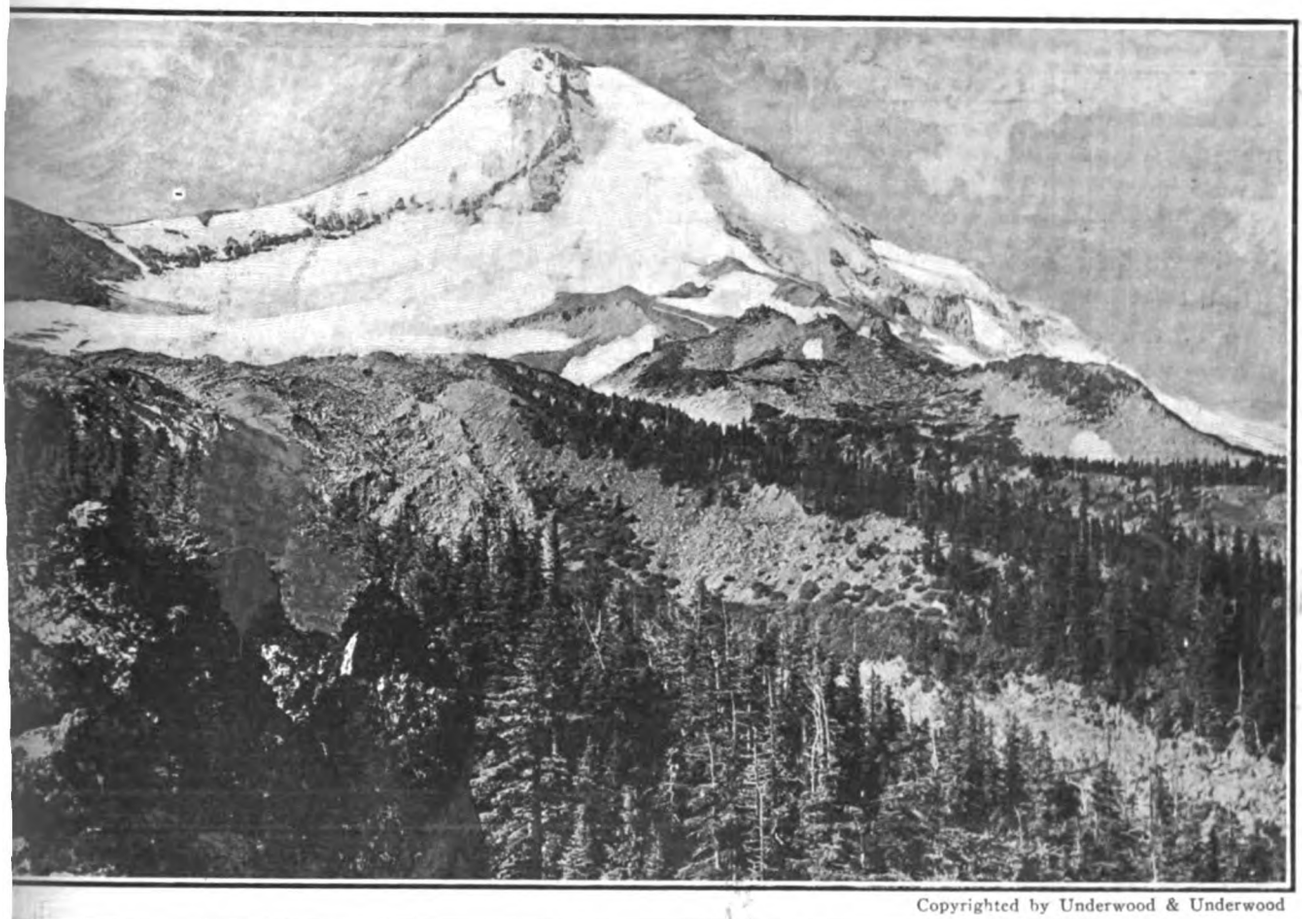
TRADE MARK Raybestos REG. U.S. PAT. OFF.
"THE ORIGINAL AND BEST ASBESTOS BRAKE LINING"

Raybestos is guaranteed for one year. It is guaranteed to give perfect braking service for that length of time, whether the car is run five hundred miles or fifty thousand miles.

To be worthy of such a guarantee Raybestos must be able to maintain its braking qualities under the maximum service it is possible for it to get in the course of a year. In average use Raybestos will last for a period of years.

However we have made the statement that Raybestos is the product of brake specialists, and we

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Copyrighted by Underwood & Underwood

RANTEE

are in effect, selling brake service with every equipment of Raybestos that goes out of our factory, and that service invariably is far in excess of our guarantee. This we know, for seldom are we required to substantiate our guarantee.

And it is uniform service you get with Raybestos. It is the same in actual use as engineers' tests show it to be. The manufacturer who lines his brakes with Raybestos cannot go wrong—the dealer who sells cars Raybestos lined cannot go wrong—and those who buy cars Raybestos equipped cannot go wrong. No one who sells or uses Raybestos gambles on either its service or efficiency—that, the resources of a responsible business organization are pledged to secure. Freely and willingly do we make good our guarantee of service.

Gambling is a poor pastime anyway; and when safety is made the stake in a gamble, it shows a remarkably thoughtless attitude. Why not use Raybestos and be sure?

TRADE MARK
Raybestos
REG. U.S. PAT. OFF.
"THE ORIGINAL AND BEST ASBESTOS BRAKE LINING"

In order to distinguish Raybestos from other brake linings, both edges have a coating of silver and every foot bears the Raybestos Trade Mark.

THE ROYAL EQUIPMENT COMPANY
1379 BOSTWICK AVE., BRIDGEPORT, CONNECTICUT

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BALL BEARING FACTS

Automobile manufacturers who have been using foreign makes of ball bearings need not worry over the war



2,000 men, skilled in manufacturing ball bearings, are at your command. Works of the New Departure Manufacturing Company.

The New Departure plant is producing between ten and twelve thousand bearings per day and this is not its maximum capacity. We can guarantee your specified deliveries not only now, but for any length of time in the future. We can also guarantee the quality of New Departure bearings to be the equal of any.

We solicit an opportunity to demonstrate to you our ability to completely meet your requirements now.

The New Departure Manufacturing Company, - Bristol, Connecticut

Western Branch: 1016-17 FORD BUILDING, DETROIT, MICHIGAN



REG. U. S. PAT. OFFICE

IGNITION SERVICE

Don't be afraid to call upon us. Ignition is our business. If you are not getting the work out of your present equipment, be it SPLITDORF or any other make, just let us hear from you.
We have factory experts and every possible facility at our immediate command to correct your troubles, and such a combination, backed up by years of experience and a willingness to give the service, must appeal to every owner of a hydrocarbon engine.

SPLITDORF ELECTRICAL COMPANY

ATLANTA	10-12 E. Harris St.	LOS ANGELES	1215 S. Hope St.
BOSTON, St. Germain & Mass. Ave.		MINNEAPOLIS	34 S. 8th St.
CHICAGO	64-72 E. 14th St.	NEWARK	290 Halsey St.
CINCINNATI	811 Race St.	NEW YORK	19-20 W. 63d St.
DALLAS	402 S. Ervay St.	PHILADELPHIA,	210-212 N. 13th St.
DAYTON	427 E. 3d St.	SAN FRANCISCO	1028 Geary St.
DETROIT	972 Woodward Ave.	SEATTLE	1628 Broadway
KANSAS CITY	1827 Grand Ave.	TORONTO	469 Yonge St.
LONDON		BUENOS AIRES	

Ford
THE UNIVERSAL CAR

Ford buyers to share in profits of the Company. Ask nearest Ford dealer for particulars.

Ford Runabout	$440
Ford Touring Car	490
Ford Town Car	690
Ford Coupelet	750
Ford Chassis	410

F. O. B. Detroit, all cars fully equipped. (In the United States of America only).

FORD MOTOR COMPANY

Detroit, Michigan

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Warm Hand Wheel for Overland Cars

Electrically Heated Retail Price $12.00



Install a Warm Hand Wheel upon your car and you'll forget the discomforts of fall and winter driving. For a Warm Hand Wheel on your car will keep your hands nice and warm regardless of the temperature of the air in which you are driving. And by keeping your hands warm you are also keeping your body warm even in zero weather.

The Warm Hand Wheel is electrically heated and can be installed upon any car using a lighting or starting system. On the Ford car it is heated by the surplus current furnished by the magneto.

We make a Warm Hand Wheel for all cars having an electric starter.

We carry in stock Warm Hand Wheels that can be installed in 20 minutes to any of the following cars—Overland, Studebaker-Four, Chalmers, Maxwell 25, King, Velie Light Four, Hupmobile, Krit and Ford. The Warm Hand Wheel is installed on the above mentioned cars by simply taking out the four screws holding the rim to spider (as shown in above cut), remove the old rim and screw on the one we furnish.

Warm Hand Wheels are sold under a guarantee of satisfaction or money back.

Live dealers will be interested in our proposition to them. Write today. New illustrated booklet just off the press mailed on request.

WARM HAND STEERING WHEEL CORPORATION - Poughkeepsie, New York

---

Here Is Another N E W Engine Driven KELLOGG Air Pump

You Want a KELLOGG on Your Car

No. 101 One Cylinder All Metal

Price complete with gauge, 15 ft. rubber tubing and all attachments carefully machined to fit car easily..... **$15**

The Pump for 1915 Cars

Attachments are all ready now for all 1915 cars and over 35 different older models, including Hudson, Buick, Overland, Reo, Studebaker, Chalmers, etc.

"Everlasting Construction"

This metal one cylinder pump with double steel piston rings is made as carefully as any good engine. The brackets and attachments are machined, not only to fit easily, but to make the pump a permanent part of the power plant.

The Price—$15—Covers the Complete Outfit

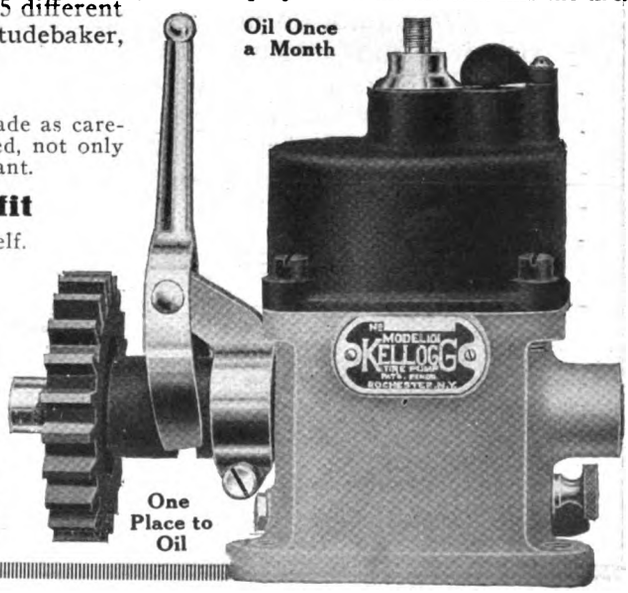
You don't have to wait for attachments or have them made yourself.

Liberal Discounts to the Trade

Every car that runs should have a Kellogg Pump at this price. The name "KELLOGG" is on the pump. It is a sure guarantee that you have a pump with attachments that will last as long as your car. Order direct.

Catalog and Special Information Free.

Fills Tire in 2 Minutes or Less. Guaranteed Not to Spray Oil in the air that fills the tire.



KELLOGG MANUFACTURING CO.

Main Office and Factory: 112 Circle St., Rochester, N. Y.

Branches: New York San Francisco Detroit Chicago

Special Pumps for Garages—Air Starting Units—New 1915 Ford Starter

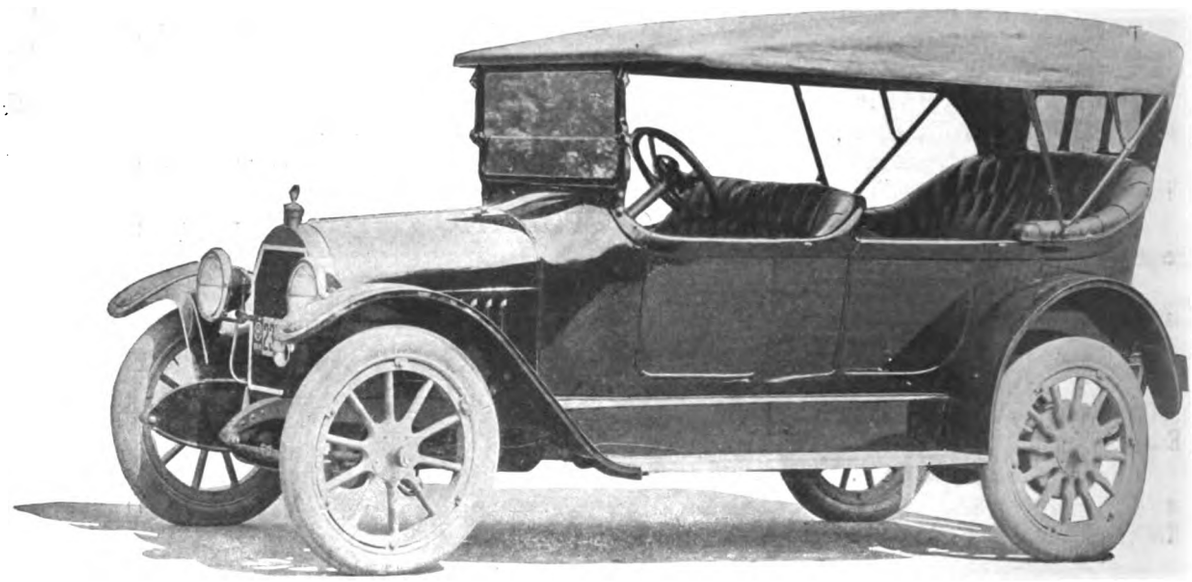
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STEARNS ANNOUNCES A
—A LEGITIMATE F

It is a high grade Stearns for one-half the money any high grade car has ever sol for. It is being built for Mr. Substantial Citizen and his family.

The performance and operation of this car far excels that of any poppet valve ca ever built—regardless of price, style, rated power or anything else.

The eighteen years we have spent building and developing motor cars, and the larg amount of money and brains used in perfecting our larger cars, are all combined and con served in this, the ***greatest light car in the world.*** The component parts of the car—al



Touring Car $1750

We cannot do justice to this car with words and pictures. The most we can say is that it is built in our own factory and has true Stearns value in every part.

The motor is a bloc casting with 40 horsepower guaranteed; cylinders 3¾ x 5⅝ inches; wheelbase 119 inches; tires 34 x 4 inches. Bosch high tension, single system ignition; Stearns design specially developed carburetor and Gray & Davis two-unit starting and lighting system, spinning the motor at high speed. Stearns manufactured transmission, located amidships; rear axle, pressed steel from wheel to wheel, Stearns design; the front springs semi-elliptic; rear cantilever design; frame of pressed steel.

Brakes are Stearns design and manufacture, the fabric lined foot brake contracting on the propeller shaft and the emergency expanding on the rear wheels.

THE F. B. STEARN

Euclid and Lakeview Ave

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NEW KNIGHT FOR $1750
'TORY BUILT CAR

f Stearns design and manufacture—perfected as units, have been so harmoniously com-ined that the effect produced in the operation, riding and control is wonderful.

Note this about the "Light Four" Stearns: It is a ***legitimate*** factory-built car. You now the history of the company and you know what it has done in the past. You know hat it had the best poppet valve car in the world. You know it abandoned that poppet alve for the sleeve valve motor. You know it has developed the sleeve valve to perfec-ion, and when you ride in this new light car you will know that you have ridden in The Jltimate Car.

The differential is Stearns manufacture—helical bevel gears giving bevel gear efficiency and worm gear quietness; steering gear, Stearns manufacture.

Control arrangement—gear shift is at right of steering wheel, located on the left side, Stearns manufacture.

Switch, lights, horn, carburetor adjustment—located on steering column under the driver's fingers.

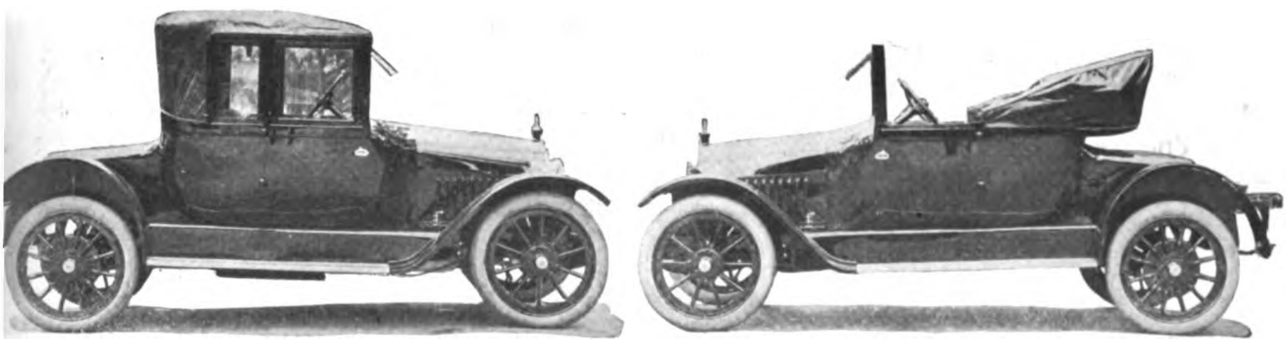
Equipment is complete, consisting of one-man top, windshield, Klaxonet, speedometer, tire carrier and one extra rim.

The Light Stearns series embraces three models—five-passenger touring car, $1750; cabriolet, $2250; limousine, $2850 and up.

The Large Stearns series has eighteen models in four and six-cylinder closed and open cars, selling from $3750 to $6200.

We have given you some idea of the specifications and features of the light cars. Enough at least to show they are unusual.

Compare the specifications with those of other cars. You will learn that the usual price is from $2500 to $4000 for cars of the same specifications — WITHOUT THE KNIGHT MOTOR.



Cabriolet $2250

COMPANY, Cleveland

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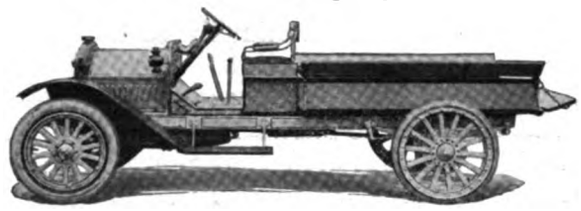
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1500 Lbs. Capacity



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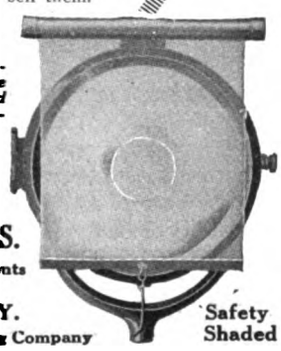
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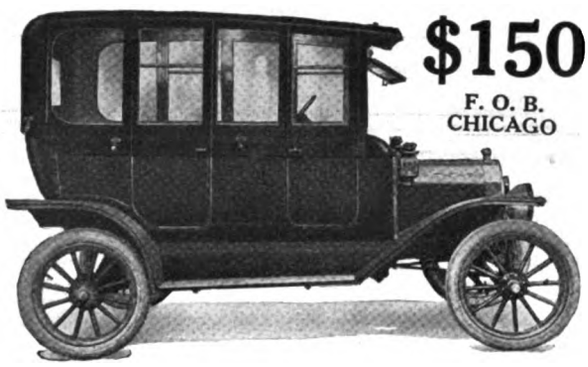
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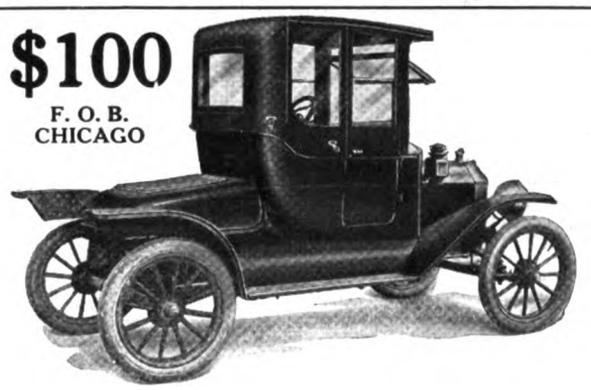
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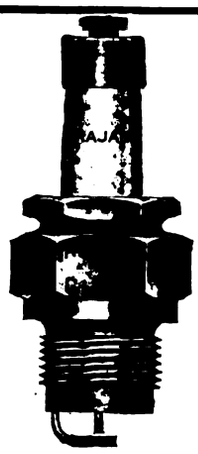
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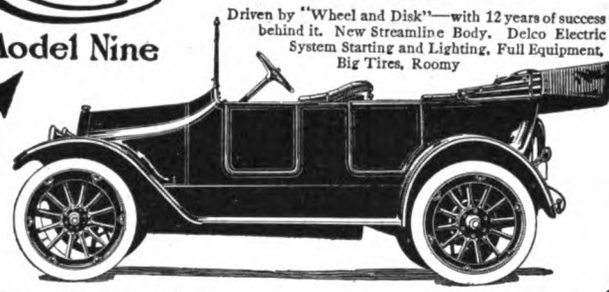
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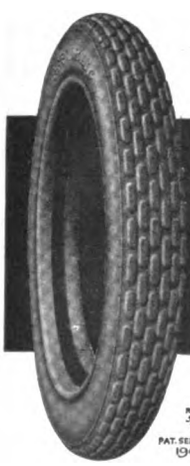


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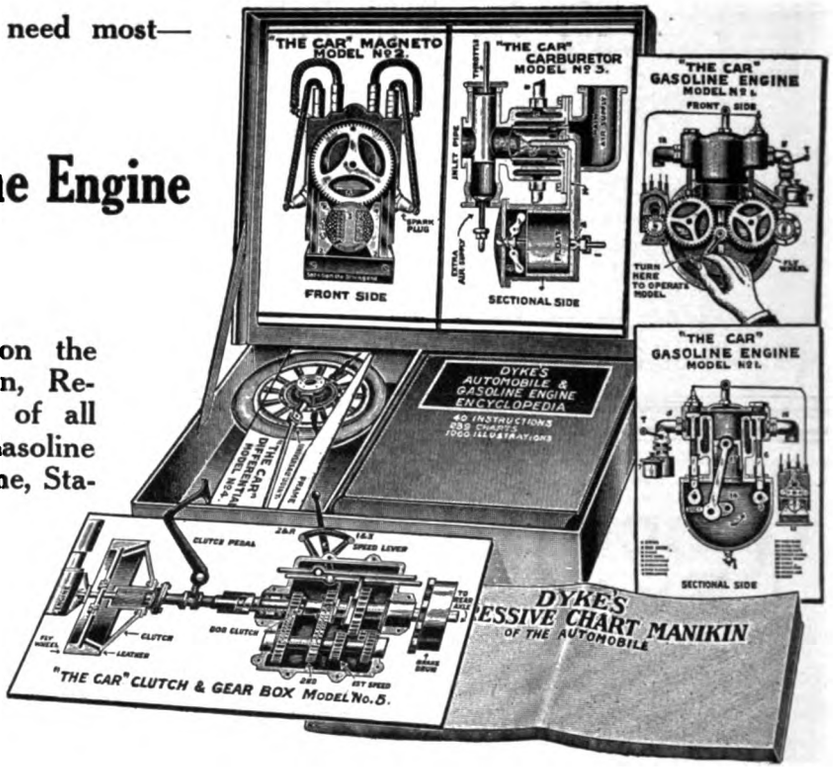
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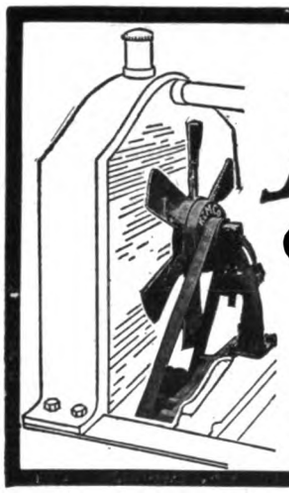
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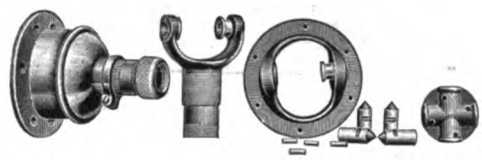
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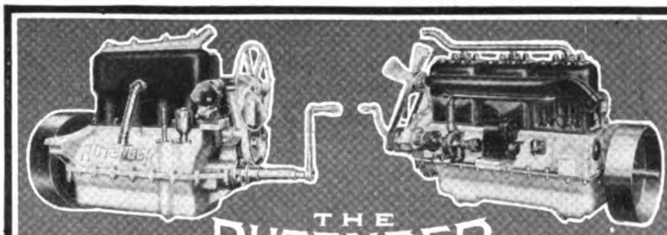
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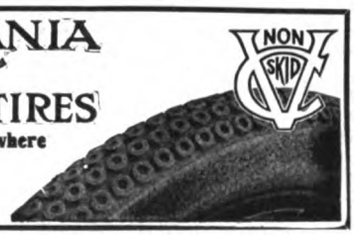
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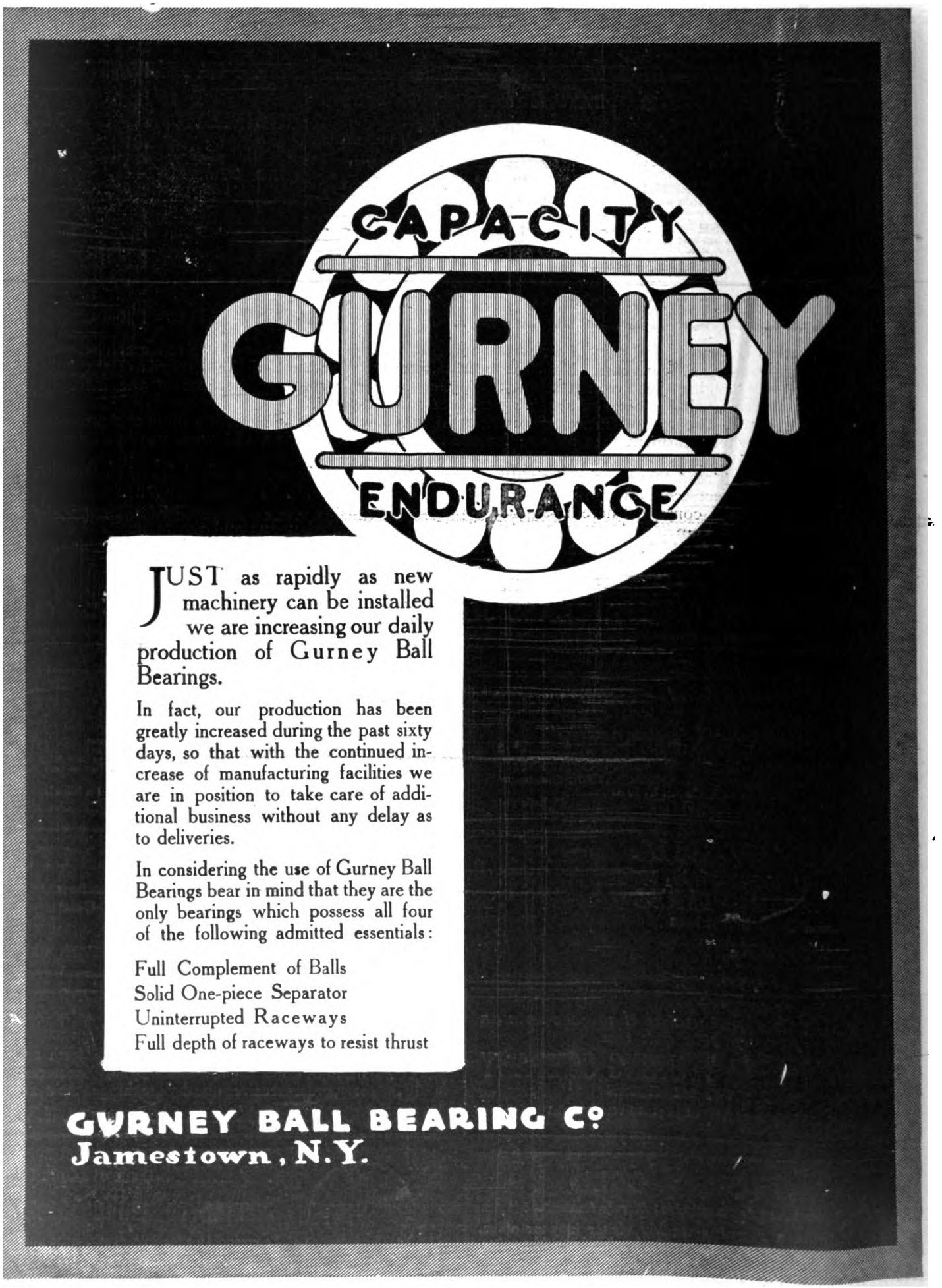
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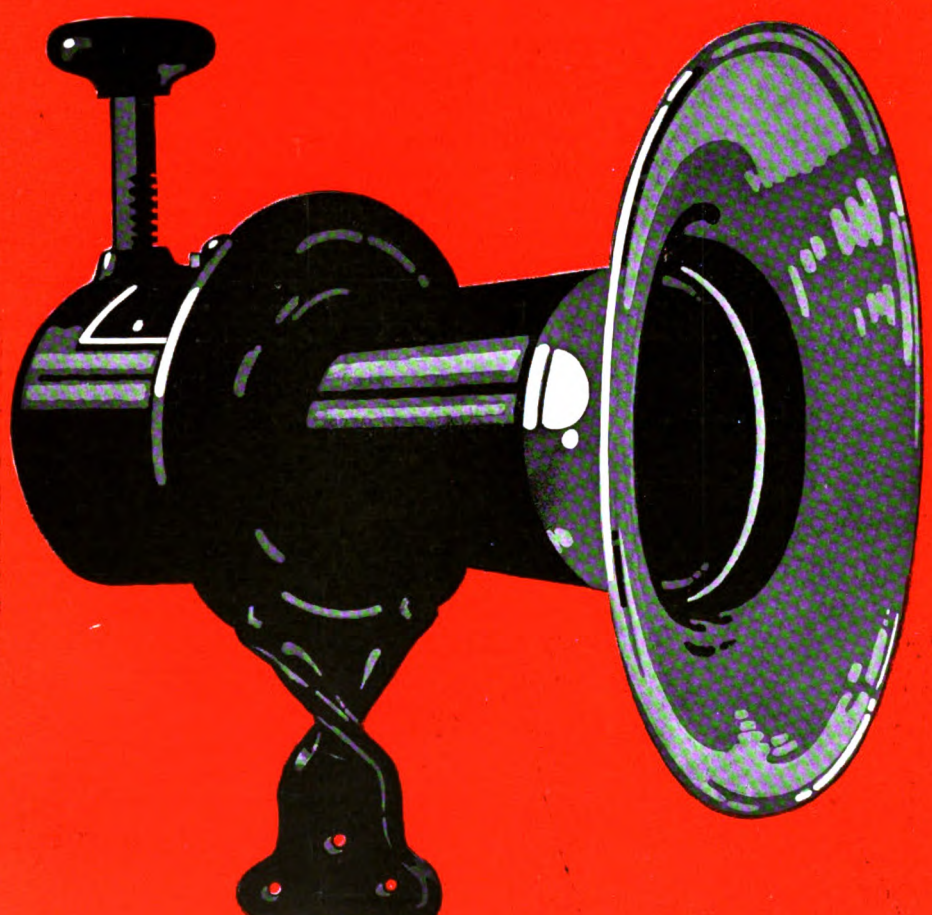
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